



09/625,191  
SEQUENCE LISTING

<110> Communi, Didier  
<120> COMPOSITIONS AND METHODS COMPRISING G-PROTEIN COUPLED RECEPTORS  
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<140> US 10/079,384  
<141> 2002-02-20  
<150> US 09/885,453  
<151> 2001-06-20  
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ggg agg gtc cct caa acc cca ggt ccc tct act gcc agt ggg gtc ccg 96  
Gly Arg Val Pro Gln Thr Pro Gly Pro Ser Thr Ala Ser Gly Val Pro  
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gag gtg ggg cta cgg gat gtt gct tcg gaa tct gtg gcc ctc ttc ttc 144  
Glu Val Gly Leu Arg Asp Val Ala Ser Glu Ser Val Ala Leu Phe Phe  
35 40 45  
atg ctc ctg ctg gac ttg act gct gtg gct ggc aat gcc gct gtg atg 192  
Met Leu Leu Leu Asp Leu Thr Ala Val Ala Gly Asn Ala Ala Val Met  
50 55 60  
gcc gtg atc gcc aag acg cct gcc ctc cga aaa ttt gtc ttc gtc ttc 240  
Ala Val Ile Ala Lys Thr Pro Ala Leu Arg Lys Phe Val Phe Val Phe  
65 70 75 80  
cac ctc tgc ctg gtg gac ctg ctg gct gcc ctg acc ctc atg ccc ctg 288  
His Leu Cys Leu Val Asp Leu Leu Ala Ala Leu Thr Leu Met Pro Leu  
85 90 95  
gcc atg ctc tcc agc tct gcc ctc ttt gac cac gcc ctc ttt ggg gag 336  
Ala Met Leu Ser Ser Ser Ala Leu Phe Asp His Ala Leu Phe Gly Glu  
100 105 110  
gtg gcc tgc cgc ctc tac ttg ttt ctg agc gtg tgc ttt gtc agc ctg 384  
Val Ala Cys Arg Leu Tyr Leu Phe Leu Ser Val Cys Phe Val Ser Leu  
115 120 125  
gcc atc ctc tcg gtg tca gcc atc aat gtg gag cgc tac tat tac gta 432  
Ala Ile Leu Ser Val Ser Ala Ile Asn Val Glu Arg Tyr Tyr Tyr Val

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Val	His	Pro	Met	Arg	Tyr	Glu	Val	Arg	Met	Thr	Leu	Gly	Leu	Val	Ala	
145					150					155					160	
tct	gtg	ctg	gtg	ggg	gtg	tgg	gtg	aag	gcc	ttg	gcc	atg	gct	tct	gtg	528
Ser	Val	Leu	Val	Gly	Val	Trp	Val	Lys	Ala	Leu	Ala	Met	Ala	Ser	Val	
				165					170					175		
cca	gtg	ttg	gga	agg	gtc	tcc	tgg	gag	gaa	gga	gct	ccc	agt	gtc	ccc	576
Pro	Val	Leu	Gly	Arg	Val	Ser	Trp	Glu	Glu	Gly	Ala	Pro	Ser	Val	Pro	
			180					185					190			
cca	ggc	tgt	tca	ctc	cag	tgg	agc	cac	agt	gcc	tac	tgc	cag	ctt	ttt	624
Pro	Gly	Cys	Ser	Leu	Gln	Trp	Ser	His	Ser	Ala	Tyr	Cys	Gln	Leu	Phe	
		195					200					205				
gtg	gtg	gtc	ttt	gct	gtc	ctt	tac	ttt	ctg	ttg	ccc	ctg	ctc	ctc	ata	672
Val	Val	Val	Phe	Ala	Val	Leu	Tyr	Phe	Leu	Leu	Pro	Leu	Leu	Leu	Ile	
	210					215					220					
ctt	gtg	gtc	tac	tgc	agc	atg	ttc	cga	gtg	gcc	cgc	gtg	gct	gcc	atg	720
Leu	Val	Val	Tyr	Cys	Ser	Met	Phe	Arg	Val	Ala	Arg	Val	Ala	Ala	Met	
225					230					235					240	
cag	cac	ggg	ccg	ctg	ccc	acg	tgg	atg	gag	aca	ccc	cgg	caa	cgc	tcc	768
Gln	His	Gly	Pro	Leu	Pro	Thr	Trp	Met	Glu	Thr	Pro	Arg	Gln	Arg	Ser	
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Glu	Ser	Leu	Ser	Ser	Arg	Ser	Thr	Met	Val	Thr	Ser	Ser	Gly	Ala	Pro	
			260					265					270			
cag	acc	acc	cca	cac	cgg	acg	ttt	ggg	gga	ggg	aaa	gca	gca	gtg	gtt	864
Gln	Thr	Thr	Pro	His	Arg	Thr	Phe	Gly	Gly	Gly	Lys	Ala	Ala	Val	Val	
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ctc	ctg	gct	gtg	ggg	gga	cag	ttc	ctg	ctc	tgt	tgg	ttg	ccc	tac	ttc	912
Leu	Leu	Ala	Val	Gly	Gly	Gln	Phe	Leu	Leu	Cys	Trp	Leu	Pro	Tyr	Phe	
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Ser	Phe	His	Leu	Tyr	Val	Ala	Leu	Ser	Ala	Gln	Pro	Ile	Ser	Thr	Gly	
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cag	gtg	gag	agt	gtg	gtc	acc	tgg	att	ggc	tac	ttt	tgc	ttc	act	tcc	1008
Gln	Val	Glu	Ser	Val	Val	Thr	Trp	Ile	Gly	Tyr	Phe	Cys	Phe	Thr	Ser	
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aac	cct	ttc	ttc	tat	gga	tgt	ctc	aac	cgg	cag	atc	cgg	ggg	gag	ctc	1056
Asn	Pro	Phe	Phe	Tyr	Gly	Cys	Leu	Asn	Arg	Gln	Ile	Arg	Gly	Glu	Leu	
			340					345					350			
agc	aag	cag	ttt	gtc	tgc	ttc	ttc	aag	cca	gct	cca	gag	gag	gag	ctg	1104
Ser	Lys	Gln	Phe	Val	Cys	Phe	Phe	Lys	Pro	Ala	Pro	Glu	Glu	Glu	Leu	
		355					360					365				
agg	ctg	cct	agc	cgg	gag	ggc	tcc	att	gag	gag	aac	ttc	ctg	cag	ttc	1152
Arg	Leu	Pro	Ser	Arg	Glu	Gly	Ser	Ile	Glu	Glu	Asn	Phe	Leu	Gln	Phe	
	370					375					380					
ctt	cag	ggg	act	ggc	tgt	cct	tct	gag	tcc	tgg	gtt	tcc	cga	ccc	cta	1200

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Leu	Gln	Gly	Thr	Gly	Cys	Pro	Ser	Glu	Ser	Trp	Val	Ser	Arg	Pro	Leu	
385					390					395					400	
ccc	agc	ccc	aag	cag	gag	cca	cct	gct	gtt	gac	ttt	cga	atc	cca	ggc	1248
Pro	Ser	Pro	Lys	Gln	Glu	Pro	Pro	Ala	Val	Asp	Phe	Arg	Ile	Pro	Gly	
				405					410					415		
cag	ata	gct	gag	gag	acc	tct	gag	ttc	ctg	gag	cag	caa	ctc	acc	agc	1296
Gln	Ile	Ala	Glu	Glu	Thr	Ser	Glu	Phe	Leu	Glu	Gln	Gln	Leu	Thr	Ser	
			420					425					430			
gac	atc	atc	atg	tca	gac	agc	tac	ctc	cgt	cct	gcc	gcc	tca	ccc	cgg	1344
Asp	Ile	Ile	Met	Ser	Asp	Ser	Tyr	Leu	Arg	Pro	Ala	Ala	Ser	Pro	Arg	
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ctg	gag	tca	tga													1356
Leu	Glu	Ser														
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Glu	Val	Gly	Leu	Arg	Asp	Val	Ala	Ser	Glu	Ser	Val	Ala	Leu	Phe	Phe	
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Met	Leu	Leu	Leu	Asp	Leu	Thr	Ala	Val	Ala	Gly	Asn	Ala	Ala	Val	Met	
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Ala	Val	Ile	Ala	Lys	Thr	Pro	Ala	Leu	Arg	Lys	Phe	Val	Phe	Val	Phe	
65					70					75					80	
His	Leu	Cys	Leu	Val	Asp	Leu	Leu	Ala	Ala	Leu	Thr	Leu	Met	Pro	Leu	
				85					90					95		
Ala	Met	Leu	Ser	Ser	Ser	Ala	Leu	Phe	Asp	His	Ala	Leu	Phe	Gly	Glu	
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Val	Ala	Cys	Arg	Leu	Tyr	Leu	Phe	Leu	Ser	Val	Cys	Phe	Val	Ser	Leu	
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Ala	Ile	Leu	Ser	Val	Ser	Ala	Ile	Asn	Val	Glu	Arg	Tyr	Tyr	Tyr	Val	
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Val His Pro Met Arg Tyr Glu Val Arg Met Thr Leu Gly Leu Val Ala  
145 150 155 160

Ser Val Leu Val Gly Val Trp Val Lys Ala Leu Ala Met Ala Ser Val  
165 170 175

Pro Val Leu Gly Arg Val Ser Trp Glu Glu Gly Ala Pro Ser Val Pro  
180 185 190

Pro Gly Cys Ser Leu Gln Trp Ser His Ser Ala Tyr Cys Gln Leu Phe  
195 200 205

Val Val Val Phe Ala Val Leu Tyr Phe Leu Leu Pro Leu Leu Leu Ile  
210 215 220

Leu Val Val Tyr Cys Ser Met Phe Arg Val Ala Arg Val Ala Ala Met  
225 230 235 240

Gln His Gly Pro Leu Pro Thr Trp Met Glu Thr Pro Arg Gln Arg Ser  
245 250 255

Glu Ser Leu Ser Ser Arg Ser Thr Met Val Thr Ser Ser Gly Ala Pro  
260 265 270

Gln Thr Thr Pro His Arg Thr Phe Gly Gly Gly Lys Ala Ala Val Val  
275 280 285

Leu Leu Ala Val Gly Gly Gln Phe Leu Leu Cys Trp Leu Pro Tyr Phe  
290 295 300

Ser Phe His Leu Tyr Val Ala Leu Ser Ala Gln Pro Ile Ser Thr Gly  
305 310 315 320

Gln Val Glu Ser Val Val Thr Trp Ile Gly Tyr Phe Cys Phe Thr Ser  
325 330 335

Asn Pro Phe Phe Tyr Gly Cys Leu Asn Arg Gln Ile Arg Gly Glu Leu  
340 345 350

Ser Lys Gln Phe Val Cys Phe Phe Lys Pro Ala Pro Glu Glu Glu Leu  
355 360 365

Arg Leu Pro Ser Arg Glu Gly Ser Ile Glu Glu Asn Phe Leu Gln Phe  
370 375 380

Leu Gln Gly Thr Gly Cys Pro Ser Glu Ser Trp Val Ser Arg Pro Leu  
385 390 395 400

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Pro Ser Pro Lys Gln Glu Pro Pro Ala Val Asp Phe Arg Ile Pro Gly  
405 410 415

Gln Ile Ala Glu Glu Thr Ser Glu Phe Leu Glu Gln Gln Leu Thr Ser  
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Asp Ile Ile Met Ser Asp Ser Tyr Leu Arg Pro Ala Ala Ser Pro Arg  
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Leu Glu Ser  
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gga act gag gag act ctt tgc tac aag cag acc ttg agc ctc acg gtg	96
Gly Thr Glu Glu Thr Leu Cys Tyr Lys Gln Thr Leu Ser Leu Thr Val	
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ctg acg tgc atc gtt tcc ctt gtc ggg ctg aca gga aac gca gtt gtg	144
Leu Thr Cys Ile Val Ser Leu Val Gly Leu Thr Gly Asn Ala Val Val	
35 40 45	
ctc tgg ctc ctg ggc tgc cgc atg cgc agg aac gcc ttc tcc atc tac	192
Leu Trp Leu Leu Gly Cys Arg Met Arg Arg Asn Ala Phe Ser Ile Tyr	
50 55 60	
atc ctc aac ttg gcc gca gca gac ttc ctc ttc ctc agc ggc cgc ctt	240
Ile Leu Asn Leu Ala Ala Ala Asp Phe Leu Phe Leu Ser Gly Arg Leu	
65 70 75 80	
ata tat tcc ctg tta agc ttc atc agt atc ccc cat acc atc tct aaa	288
Ile Tyr Ser Leu Leu Ser Phe Ile Ser Ile Pro His Thr Ile Ser Lys	
85 90 95	
atc ctc tat cct gtg atg atg ttt tcc tac ttt gca ggc ctg agc ttt	336
Ile Leu Tyr Pro Val Met Met Phe Ser Tyr Phe Ala Gly Leu Ser Phe	
100 105 110	
ctg agt gcc gtg agc acc gag cgc tgc ctg tcc gtc ctg tgg ccc atc	384
Leu Ser Ala Val Ser Thr Glu Arg Cys Leu Ser Val Leu Trp Pro Ile	
115 120 125	
tgg tac cgc tgc cac cgc ccc aca cac ctg tca gcg gtg gtg tgt gtc	432
Trp Tyr Arg Cys His Arg Pro Thr His Leu Ser Ala Val Val Cys Val	
130 135 140	

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ctg ctc tgg gcc ctg tcc ctg ctg cgg agc atc ctg gag tgg atg tta Leu Leu Trp Ala Leu Ser Leu Leu Arg Ser Ile Leu Glu Trp Met Leu 145 150 155 160	480
tgt ggc ttc ctg ttc agt ggt gct gat tct gct tgg tgt caa aca tca Cys Gly Phe Leu Phe Ser Gly Ala Asp Ser Ala Trp Cys Gln Thr Ser 165 170 175	528
gat ttc atc aca gtc gcg tgg ctg att ttt tta tgt gtg gtt ctc tgt Asp Phe Ile Thr Val Ala Trp Leu Ile Phe Leu Cys Val Val Leu Cys 180 185 190	576
ggg tcc agc ctg gtc ctg ctg atc agg att ctc tgt gga tcc cgg aag Gly Ser Ser Leu Val Leu Leu Ile Arg Ile Leu Cys Gly Ser Arg Lys 195 200 205	624
ata ccg ctg acc agg ctg tac gtg acc atc ctg ctc aca gta ctg gtc Ile Pro Leu Thr Arg Leu Tyr Val Thr Ile Leu Leu Thr Val Leu Val 210 215 220	672
ttc ctc ctc tgt ggc ctg ccc ttt ggc att cag ttt ttc cta ttt tta Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile Gln Phe Phe Leu Phe Leu 225 230 235 240	720
tgg atc cac gtg gac agg gaa gtc tta ttt tgt cat gtt cat cta gtt Trp Ile His Val Asp Arg Glu Val Leu Phe Cys His Val His Leu Val 245 250 255	768
tct att ttc ctg tcc gct ctt aac agc agt gcc aac ccc atc att tac Ser Ile Phe Leu Ser Ala Leu Asn Ser Ser Ala Asn Pro Ile Ile Tyr 260 265 270	816
ttc ttc gtg ggc tcc ttt agg cag cgt caa aat agg cag aac ctg aag Phe Phe Val Gly Ser Phe Arg Gln Arg Gln Asn Arg Gln Asn Leu Lys 275 280 285	864
ctg gtt ctc cag agg gct ctg cag gac gcg tct gag gtg gat gaa ggt Leu Val Leu Gln Arg Ala Leu Gln Asp Ala Ser Glu Val Asp Glu Gly 290 295 300	912
gga ggg cag ctt cct gag gaa atc ctg gag ctg tcg gga agc aga ttg Gly Gly Gln Leu Pro Glu Glu Ile Leu Glu Leu Ser Gly Ser Arg Leu 305 310 315 320	960
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Gly Thr Glu Glu Thr Leu Cys Tyr Lys Gln Thr Leu Ser Leu Thr Val  
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Leu Thr Cys Ile Val Ser Leu Val Gly Leu Thr Gly Asn Ala Val Val  
35 40 45

Leu Trp Leu Leu Gly Cys Arg Met Arg Arg Asn Ala Phe Ser Ile Tyr  
50 55 60

Ile Leu Asn Leu Ala Ala Ala Asp Phe Leu Phe Leu Ser Gly Arg Leu  
65 70 75 80

Ile Tyr Ser Leu Leu Ser Phe Ile Ser Ile Pro His Thr Ile Ser Lys  
85 90 95

Ile Leu Tyr Pro Val Met Met Phe Ser Tyr Phe Ala Gly Leu Ser Phe  
100 105 110

Leu Ser Ala Val Ser Thr Glu Arg Cys Leu Ser Val Leu Trp Pro Ile  
115 120 125

Trp Tyr Arg Cys His Arg Pro Thr His Leu Ser Ala Val Val Cys Val  
130 135 140

Leu Leu Trp Ala Leu Ser Leu Leu Arg Ser Ile Leu Glu Trp Met Leu  
145 150 155 160

Cys Gly Phe Leu Phe Ser Gly Ala Asp Ser Ala Trp Cys Gln Thr Ser  
165 170 175

Asp Phe Ile Thr Val Ala Trp Leu Ile Phe Leu Cys Val Val Leu Cys  
180 185 190

Gly Ser Ser Leu Val Leu Leu Ile Arg Ile Leu Cys Gly Ser Arg Lys  
195 200 205

Ile Pro Leu Thr Arg Leu Tyr Val Thr Ile Leu Leu Thr Val Leu Val  
210 215 220

Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile Gln Phe Phe Leu Phe Leu  
225 230 235 240

Trp Ile His Val Asp Arg Glu Val Leu Phe Cys His Val His Leu Val  
245 250 255

Ser Ile Phe Leu Ser Ala Leu Asn Ser Ser Ala Asn Pro Ile Ile Tyr  
260 265 270

Phe Phe Val Gly Ser Phe Arg Gln Arg Gln Asn Arg Gln Asn Leu Lys

275

280

285

Leu Val Leu Gln Arg Ala Leu Gln Asp Ala Ser Glu Val Asp Glu Gly  
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Gly Gly Gln Leu Pro Glu Glu Ile Leu Glu Leu Ser Gly Ser Arg Leu  
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Glu Gln

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 cgt gga gct ctg ctc ctg gag gga gcc tcc cgg gac atg gag aag gtg 96  
 Arg Gly Ala Leu Leu Leu Glu Gly Ala Ser Arg Asp Met Glu Lys Val  
 20 25 30  
 gac atg aat aca tca cag gaa caa ggt ctc tgc cag ttc tca gag aag 144  
 Asp Met Asn Thr Ser Gln Glu Gln Gly Leu Cys Gln Phe Ser Glu Lys  
 35 40 45  
 tac aag caa gtc tac ctc tcc ctg gcc tac agt atc atc ttt atc cta 192  
 Tyr Lys Gln Val Tyr Leu Ser Leu Ala Tyr Ser Ile Ile Phe Ile Leu  
 50 55 60  
 ggg ctg cca cta aat ggc act gtc ttg tgg cac tcc tgg ggc caa acc 240  
 Gly Leu Pro Leu Asn Gly Thr Val Leu Trp His Ser Trp Gly Gln Thr  
 65 70 75 80  
 aag cgc tgg agc tgt gcc acc acc tat ctg gtg aac ctg atg gtg gcc 288  
 Lys Arg Trp Ser Cys Ala Thr Thr Tyr Leu Val Asn Leu Met Val Ala  
 85 90 95  
 gac ctg ctt tat gtg cta ttg ccc ttc ctc atc atc acc tac tca cta 336  
 Asp Leu Leu Tyr Val Leu Leu Pro Phe Leu Ile Ile Thr Tyr Ser Leu  
 100 105 110  
 gat gac agg tgg ccc ttc ggg gag ctg ctc tgc aag ctg gtg cac ttc 384  
 Asp Asp Arg Trp Pro Phe Gly Glu Leu Leu Cys Lys Leu Val His Phe  
 115 120 125  
 ctg ttc tat atc aac ctt tac ggc agc atc ctg ctg ctg acc tgc atc 432  
 Leu Phe Tyr Ile Asn Leu Tyr Gly Ser Ile Leu Leu Thr Cys Ile  
 130 135 140  
 tct gtg cac cag ttc cta ggt gtg tgc cac cca ctg tgt tcg ctg ccc 480



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Ser 145	Val	His	Gln	Phe	Leu 150	Gly	Val	Cys	His	Pro 155	Leu	Cys	Ser	Leu	Pro 160	
tac	cgg	acc	cgc	agg	cat	gcc	tgg	ctg	ggc	acc	agc	acc	acc	tgg	gcc	528
Tyr	Arg	Thr	Arg	Arg 165	His	Ala	Trp	Leu	Gly 170	Thr	Ser	Thr	Thr	Trp 175	Ala	
ctg	gtg	gtc	ctc	cag	ctg	ctg	ccc	aca	ctg	gcc	ttc	tcc	cac	acg	gac	576
Leu	Val	Val	Leu 180	Gln	Leu	Leu	Pro	Thr 185	Leu	Ala	Phe	Ser	His 190	Thr	Asp	
tac	atc	aat	ggc	cag	atg	atc	tgg	tat	gac	atg	acc	agc	caa	gag	aat	624
Tyr	Ile	Asn 195	Gly	Gln	Met	Ile	Trp 200	Tyr	Asp	Met	Thr	Ser 205	Gln	Glu	Asn	
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Phe	Asp 210	Arg	Leu	Phe	Ala	Tyr 215	Gly	Ile	Val	Leu	Thr 220	Leu	Ser	Gly	Phe	
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Phe	Pro	Ser	Leu	Val 230	Ile	Leu	Val	Cys	Tyr	Ser 235	Leu	Met	Val	Arg	Ser 240	
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Leu	Ile	Lys	Pro	Glu 245	Glu	Asn	Leu	Met	Arg 250	Thr	Gly	Asn	Thr	Ala 255	Arg	
gcc	agg	tcc	atc	cgg	acc	atc	cta	ctg	gtg	tgt	ggc	ctc	ttc	acc	ctc	816
Ala	Arg	Ser	Ile 260	Arg	Thr	Ile	Leu	Leu 265	Val	Cys	Gly	Leu	Phe 270	Thr	Leu	
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Cys	Phe	Val 275	Pro	Phe	His	Ile	Thr 280	Arg	Ser	Phe	Tyr	Leu 285	Thr	Ile	Cys	
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Phe	Leu	Leu	Ser	Gln	Asp	Cys 295	Gln	Leu	Leu	Met	Ala 300	Ala	Ser	Val	Ala	
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Tyr	Lys	Ile	Trp	Arg	Pro 310	Leu	Val	Ser	Val	Ser 315	Ser	Cys	Leu	Asn	Pro 320	
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Val	Leu	Tyr	Phe	Leu 325	Ser	Arg	Gly	Ala	Lys 330	Ile	Glu	Ser	Gly	Ser 335	Ser	
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Arg	Asn															

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20 25 30

Asp Met Asn Thr Ser Gln Glu Gln Gly Leu Cys Gln Phe Ser Glu Lys  
35 40 45

Tyr Lys Gln Val Tyr Leu Ser Leu Ala Tyr Ser Ile Ile Phe Ile Leu  
50 55 60

Gly Leu Pro Leu Asn Gly Thr Val Leu Trp His Ser Trp Gly Gln Thr  
65 70 75 80

Lys Arg Trp Ser Cys Ala Thr Thr Tyr Leu Val Asn Leu Met Val Ala  
85 90 95

Asp Leu Leu Tyr Val Leu Leu Pro Phe Leu Ile Ile Thr Tyr Ser Leu  
100 105 110

Asp Asp Arg Trp Pro Phe Gly Glu Leu Leu Cys Lys Leu Val His Phe  
115 120 125

Leu Phe Tyr Ile Asn Leu Tyr Gly Ser Ile Leu Leu Leu Thr Cys Ile  
130 135 140

Ser Val His Gln Phe Leu Gly Val Cys His Pro Leu Cys Ser Leu Pro  
145 150 155 160

Tyr Arg Thr Arg Arg His Ala Trp Leu Gly Thr Ser Thr Thr Trp Ala  
165 170 175

Leu Val Val Leu Gln Leu Leu Pro Thr Leu Ala Phe Ser His Thr Asp  
180 185 190

Tyr Ile Asn Gly Gln Met Ile Trp Tyr Asp Met Thr Ser Gln Glu Asn  
195 200 205

Phe Asp Arg Leu Phe Ala Tyr Gly Ile Val Leu Thr Leu Ser Gly Phe  
210 215 220

Phe Pro Ser Leu Val Ile Leu Val Cys Tyr Ser Leu Met Val Arg Ser  
225 230 235 240

Leu Ile Lys Pro Glu Glu Asn Leu Met Arg Thr Gly Asn Thr Ala Arg  
245 250 255

Ala Arg Ser Ile Arg Thr Ile Leu Leu Val Cys Gly Leu Phe Thr Leu  
260 265 270

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Cys Phe Val Pro Phe His Ile Thr Arg Ser Phe Tyr Leu Thr Ile Cys  
275 280 285

Phe Leu Leu Ser Gln Asp Cys Gln Leu Leu Met Ala Ala Ser Val Ala  
290 295 300

Tyr Lys Ile Trp Arg Pro Leu Val Ser Val Ser Ser Cys Leu Asn Pro  
305 310 315 320

Val Leu Tyr Phe Leu Ser Arg Gly Ala Lys Ile Glu Ser Gly Ser Ser  
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Arg Asn

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tat tcc aga ggg agc aca gtg cac acg gcc tac ctg gtg ctg agc tcc 96  
Tyr Ser Arg Gly Ser Thr Val His Thr Ala Tyr Leu Val Leu Ser Ser  
20 25 30  
ctg gcc atg ttc acc tgc ctg tgc ggg atg gca ggc aac agc atg gtg 144  
Leu Ala Met Phe Thr Cys Leu Cys Gly Met Ala Gly Asn Ser Met Val  
35 40 45  
atc tgg ctg ctg ggc ttt cga atg cac agg aac ccc ttc tgc atc tat 192  
Ile Trp Leu Leu Gly Phe Arg Met His Arg Asn Pro Phe Cys Ile Tyr  
50 55 60  
atc ctc aac ctg gcg gca gcc gac ctc ctc ttc ctc ttc agc atg gct 240  
Ile Leu Asn Leu Ala Ala Ala Asp Leu Leu Phe Leu Phe Ser Met Ala  
65 70 75 80  
tcc acg ctc agc ctg gaa acc cag ccc ctg gtc aat acc act gac aag 288  
Ser Thr Leu Ser Leu Glu Thr Gln Pro Leu Val Asn Thr Thr Asp Lys  
85 90 95  
gtc cac gag ctg atg aag aga ctg atg tac ttt gcc tac aca gtg ggc 336  
Val His Glu Leu Met Lys Arg Leu Met Tyr Phe Ala Tyr Thr Val Gly  
100 105 110  
ctg agc ctg ctg acg gcc atc agc acc cag cgc tgt ctc tct gtc ctc 384  
Leu Ser Leu Leu Thr Ala Ile Ser Thr Gln Arg Cys Leu Ser Val Leu  
115 120 125

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ttc cct atc tgg ttc aag tgt cac cgg ccc agg cac ctg tca gcc tgg Phe Pro Ile Trp Phe Lys Cys His Arg Pro Arg His Leu Ser Ala Trp 130 135 140	432
gtg tgt ggc ctg ctg tgg aca ctc tgt ctc ctg atg aac ggg ttg acc Val Cys Gly Leu Leu Trp Thr Leu Cys Leu Leu Met Asn Gly Leu Thr 145 150 155 160	480
tct tcc ttc tgc agc aag ttc ttg aaa ttc aat gaa gat cgg tgc ttc Ser Ser Phe Cys Ser Lys Phe Leu Lys Phe Asn Glu Asp Arg Cys Phe 165 170 175	528
agg gtg gac atg gtc cag gcc gcc ctc atc atg ggg gtc tta acc cca Arg Val Asp Met Val Gln Ala Ala Leu Ile Met Gly Val Leu Thr Pro 180 185 190	576
gtg atg act ctg tcc agc ctg acc ctc ttt gtc tgg gtg cgg agg agc Val Met Thr Leu Ser Ser Leu Thr Leu Phe Val Trp Val Arg Arg Ser 195 200 205	624
tcc cag cag tgg cgg cgg cag ccc aca cgg ctg ttc gtg gtg gtc ctg Ser Gln Gln Trp Arg Arg Gln Pro Thr Arg Leu Phe Val Val Val Leu 210 215 220	672
gcc tct gtc ctg gtg ttc ctc atc tgt tcc ctg cct ctg agc atc tac Ala Ser Val Leu Val Phe Leu Ile Cys Ser Leu Pro Leu Ser Ile Tyr 225 230 235 240	720
tgg ttt gtg ctc tac tgg ttg agc ctg ccg ccc gag atg cag gtc ctg Trp Phe Val Leu Tyr Trp Leu Ser Leu Pro Pro Glu Met Gln Val Leu 245 250 255	768
tgc ttc agc ttg tca cgc ctc tcc tcg tcc gta agc agc agc gcc aac Cys Phe Ser Leu Ser Arg Leu Ser Ser Ser Val Ser Ser Ser Ala Asn 260 265 270	816
ccc gtc atc tac ttc ctg gtg ggc agc cgg agg agc cac agg ctg ccc Pro Val Ile Tyr Phe Leu Val Gly Ser Arg Arg Ser His Arg Leu Pro 275 280 285	864
acc agg tcc ctg ggg act gtg ctc caa cag gcg ctt cgc gag gag ccc Thr Arg Ser Leu Gly Thr Val Leu Gln Gln Ala Leu Arg Glu Glu Pro 290 295 300	912
gag ctg gaa ggt ggg gag acg ccc acc gtg ggc acc aat gag atg ggg Glu Leu Glu Gly Gly Glu Thr Pro Thr Val Gly Thr Asn Glu Met Gly 305 310 315 320	960
gct tga Ala	966

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Met Asn Gln Thr Leu Asn Ser Ser Gly Thr Val Glu Ser Ala Leu Asn  
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Tyr Ser Arg Gly Ser Thr Val His Thr Ala Tyr Leu Val Leu Ser Ser  
20 25 30

Leu Ala Met Phe Thr Cys Leu Cys Gly Met Ala Gly Asn Ser Met Val  
35 40 45

Ile Trp Leu Leu Gly Phe Arg Met His Arg Asn Pro Phe Cys Ile Tyr  
50 55 60

Ile Leu Asn Leu Ala Ala Ala Asp Leu Leu Phe Leu Phe Ser Met Ala  
65 70 75 80

Ser Thr Leu Ser Leu Glu Thr Gln Pro Leu Val Asn Thr Thr Asp Lys  
85 90 95

Val His Glu Leu Met Lys Arg Leu Met Tyr Phe Ala Tyr Thr Val Gly  
100 105 110

Leu Ser Leu Leu Thr Ala Ile Ser Thr Gln Arg Cys Leu Ser Val Leu  
115 120 125

Phe Pro Ile Trp Phe Lys Cys His Arg Pro Arg His Leu Ser Ala Trp  
130 135 140

Val Cys Gly Leu Leu Trp Thr Leu Cys Leu Leu Met Asn Gly Leu Thr  
145 150 155 160

Ser Ser Phe Cys Ser Lys Phe Leu Lys Phe Asn Glu Asp Arg Cys Phe  
165 170 175

Arg Val Asp Met Val Gln Ala Ala Leu Ile Met Gly Val Leu Thr Pro  
180 185 190

Val Met Thr Leu Ser Ser Leu Thr Leu Phe Val Trp Val Arg Arg Ser  
195 200 205

Ser Gln Gln Trp Arg Arg Gln Pro Thr Arg Leu Phe Val Val Val Leu  
210 215 220

Ala Ser Val Leu Val Phe Leu Ile Cys Ser Leu Pro Leu Ser Ile Tyr  
225 230 235 240

Trp Phe Val Leu Tyr Trp Leu Ser Leu Pro Pro Glu Met Gln Val Leu  
245 250 255

Cys Phe Ser Leu Ser Arg Leu Ser Ser Ser Val Ser Ser Ser Ala Asn

260

265

270

Pro Val Ile Tyr Phe Leu Val Gly Ser Arg Arg Ser His Arg Leu Pro  
 275 280 285

Thr Arg Ser Leu Gly Thr Val Leu Gln Gln Ala Leu Arg Glu Glu Pro  
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Glu Leu Glu Gly Gly Glu Thr Pro Thr Val Gly Thr Asn Glu Met Gly  
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 gat gat gag gac tcc tac ccc caa ggt ggc tgg gac acg gtc ttc ctg 96  
 Asp Asp Glu Asp Ser Tyr Pro Gln Gly Gly Trp Asp Thr Val Phe Leu  
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 gtg gcc ctg ctg ctc ctt ggg ctg cca gcc aat ggg ttg atg gcg tgg 144  
 Val Ala Leu Leu Leu Leu Gly Leu Pro Ala Asn Gly Leu Met Ala Trp  
 35 40 45  
 ctg gcc ggc tcc cag gcc cgg cat gga gct ggc acg cgt ctg gcg ctg 192  
 Leu Ala Gly Ser Gln Ala Arg His Gly Ala Gly Thr Arg Leu Ala Leu  
 50 55 60  
 ctc ctg ctc agc ctg gcc ctc tct gac ttc ttg ttc ctg gca gca gcg 240  
 Leu Leu Leu Ser Leu Ala Leu Ser Asp Phe Leu Phe Leu Ala Ala Ala  
 65 70 75 80  
 gcc ttc cag atc cta gag atc cgg cat ggg gga cac tgg ccg ctg ggg 288  
 Ala Phe Gln Ile Leu Glu Ile Arg His Gly Gly His Trp Pro Leu Gly  
 85 90 95  
 aca gct gcc tgc cgc ttc tac tac ttc cta tgg ggc gtg tcc tac tcc 336  
 Thr Ala Ala Cys Arg Phe Tyr Tyr Phe Leu Trp Gly Val Ser Tyr Ser  
 100 105 110  
 tcc ggc ctc ttc ctg ctg gcc gcc ctc agc ctc gac cgc tgc ctg ctg 384  
 Ser Gly Leu Phe Leu Leu Ala Ala Leu Ser Leu Asp Arg Cys Leu Leu  
 115 120 125  
 gcg ctg tgc cca cac tgg tac cct ggg cac cgc cca gtc cgc ctg ccc 432

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Ala	Leu	Cys	Pro	His	Trp	Tyr	Pro	Gly	His	Arg	Pro	Val	Arg	Leu	Pro	
130						135					140					
ctc	tgg	gtc	tgc	gcc	ggc	gtc	tgg	gtg	ctg	gcc	aca	ctc	ttc	agc	gtg	480
Leu	Trp	Val	Cys	Ala	Gly	Val	Trp	Val	Leu	Ala	Thr	Leu	Phe	Ser	Val	
145					150					155					160	
ccc	tgg	ctg	gtc	ttc	ccc	gag	gct	gcc	gtc	tgg	tgg	tac	gac	ctg	gtc	528
Pro	Trp	Leu	Val	Phe	Pro	Glu	Ala	Ala	Val	Trp	Trp	Tyr	Asp	Leu	Val	
				165					170					175		
atc	tgc	ctg	gac	ttc	tgg	gac	agc	gag	gag	ctg	tcg	ctg	agg	atg	ctg	576
Ile	Cys	Leu	Asp	Phe	Trp	Asp	Ser	Glu	Glu	Leu	Ser	Leu	Arg	Met	Leu	
			180					185					190			
gag	gtc	ctg	ggg	ggc	ttc	ctg	cct	ttc	ctc	ctg	ctg	ctc	gtc	tgc	cac	624
Glu	Val	Leu	Gly	Gly	Phe	Leu	Pro	Phe	Leu	Leu	Leu	Leu	Val	Cys	His	
		195					200					205				
gtg	ctc	acc	cag	gcc	aca	gcc	tgt	cgc	acc	tgc	cac	cgc	caa	cag	cag	672
Val	Leu	Thr	Gln	Ala	Thr	Ala	Cys	Arg	Thr	Cys	His	Arg	Gln	Gln	Gln	
210						215					220					
ccc	gca	gcc	tgc	cgg	ggc	ttc	gcc	cgt	gtg	gcc	agg	acc	att	ctg	tca	720
Pro	Ala	Ala	Cys	Arg	Gly	Phe	Ala	Arg	Val	Ala	Arg	Thr	Ile	Leu	Ser	
225					230				235					240		
gcc	tat	gtg	gtc	ctg	agg	ctg	ccc	tac	cag	ctg	gcc	cag	ctg	ctc	tac	768
Ala	Tyr	Val	Val	Leu	Arg	Leu	Pro	Tyr	Gln	Leu	Ala	Gln	Leu	Leu	Tyr	
				245					250					255		
ctg	gcc	ttc	ctg	tgg	gac	gtc	tac	tct	ggc	tac	ctg	ctc	tgg	gag	gcc	816
Leu	Ala	Phe	Leu	Trp	Asp	Val	Tyr	Ser	Gly	Tyr	Leu	Leu	Trp	Glu	Ala	
			260					265					270			
ctg	gtc	tac	tcc	gac	tac	ctg	atc	cta	ctc	aac	agc	tgc	ctc	agc	ccc	864
Leu	Val	Tyr	Ser	Asp	Tyr	Leu	Ile	Leu	Leu	Asn	Ser	Cys	Leu	Ser	Pro	
		275					280					285				
ttc	ctc	tgc	ctc	atg	gcc	agt	gcc	gac	ctc	cgg	acc	ctg	ctg	cgc	tcc	912
Phe	Leu	Cys	Leu	Met	Ala	Ser	Ala	Asp	Leu	Arg	Thr	Leu	Leu	Arg	Ser	
	290					295					300					
gtg	ctc	tcg	tcc	ttc	gcg	gca	gct	ctc	tgc	gag	gag	cgg	ccg	ggc	agc	960
Val	Leu	Ser	Ser	Phe	Ala	Ala	Ala	Leu	Cys	Glu	Glu	Arg	Pro	Gly	Ser	
305					310				315					320		
ttc	acg	ccc	act	gag	cca	cag	acc	cag	cta	gat	tct	gag	ggc	cca	act	1008
Phe	Thr	Pro	Thr	Glu	Pro	Gln	Thr	Gln	Leu	Asp	Ser	Glu	Gly	Pro	Thr	
				325					330					335		
ctg	cca	gag	ccg	atg	gca	gag	gcc	cag	tca	cag	atg	gat	cct	gtg	gcc	1056
Leu	Pro	Glu	Pro	Met	Ala	Glu	Ala	Gln	Ser	Gln	Met	Asp	Pro	Val	Ala	
			340					345					350			
cag	cct	cag	gtg	aac	ccc	aca	ctc	cag	cca	cga	tcg	gat	ccc	aca	gct	1104
Gln	Pro	Gln	Val	Asn	Pro	Thr	Leu	Gln	Pro	Arg	Ser	Asp	Pro	Thr	Ala	
		355					360					365				
cag	cca	cag	ctg	aac	cct	acg	gcc	cag	cca	cag	tcg	gat	ccc	aca	gcc	1152
Gln	Pro	Gln	Leu	Asn	Pro	Thr	Ala	Gln	Pro	Gln	Ser	Asp	Pro	Thr	Ala	
	370					375					380					

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cag cca cag ctg aac ctc atg gcc cag cca cag tca gat tct gtg gcc 1200  
Gln Pro Gln Leu Asn Leu Met Ala Gln Pro Gln Ser Asp Ser Val Ala  
385 390 395 400

cag cca cag gca gac act aac gtc cag acc cct gca cct gct gcc agt 1248  
Gln Pro Gln Ala Asp Thr Asn Val Gln Thr Pro Ala Pro Ala Ala Ser  
405 410 415

tct gtg ccc agt ccc tgt gat gaa gct tcc cca acc cca tcc tcg cat 1296  
Ser Val Pro Ser Pro Cys Asp Glu Ala Ser Pro Thr Pro Ser Ser His  
420 425 430

cct acc cca ggg gcc ctt gag gac cca gcc aca cct cct gcc tct gaa 1344  
Pro Thr Pro Gly Ala Leu Glu Asp Pro Ala Thr Pro Pro Ala Ser Glu  
435 440 445

gga gaa agc ccc agc agc acc ccg cca gag gcg gcc ccg ggc gca ggc 1392  
Gly Glu Ser Pro Ser Ser Thr Pro Pro Glu Ala Ala Pro Gly Ala Gly  
450 455 460

ccc acg tga 1401  
Pro Thr  
465

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Met Glu Ala Asp Leu Gly Ala Thr Gly His Arg Pro Arg Thr Glu Leu  
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Asp Asp Glu Asp Ser Tyr Pro Gln Gly Gly Trp Asp Thr Val Phe Leu  
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Val Ala Leu Leu Leu Gly Leu Pro Ala Asn Gly Leu Met Ala Trp  
35 40 45

Leu Ala Gly Ser Gln Ala Arg His Gly Ala Gly Thr Arg Leu Ala Leu  
50 55 60

Leu Leu Leu Ser Leu Ala Leu Ser Asp Phe Leu Phe Leu Ala Ala Ala  
65 70 75 80

Ala Phe Gln Ile Leu Glu Ile Arg His Gly Gly His Trp Pro Leu Gly  
85 90 95

Thr Ala Ala Cys Arg Phe Tyr Tyr Phe Leu Trp Gly Val Ser Tyr Ser  
100 105 110

Ser Gly Leu Phe Leu Leu Ala Ala Leu Ser Leu Asp Arg Cys Leu Leu  
115 120 125



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Ala Leu Cys Pro His Trp Tyr Pro Gly His Arg Pro Val Arg Leu Pro  
130 135 140

Leu Trp Val Cys Ala Gly Val Trp Val Leu Ala Thr Leu Phe Ser Val  
145 150 155 160

Pro Trp Leu Val Phe Pro Glu Ala Ala Val Trp Trp Tyr Asp Leu Val  
165 170 175

Ile Cys Leu Asp Phe Trp Asp Ser Glu Glu Leu Ser Leu Arg Met Leu  
180 185 190

Glu Val Leu Gly Gly Phe Leu Pro Phe Leu Leu Leu Leu Val Cys His  
195 200 205

Val Leu Thr Gln Ala Thr Ala Cys Arg Thr Cys His Arg Gln Gln Gln  
210 215 220

Pro Ala Ala Cys Arg Gly Phe Ala Arg Val Ala Arg Thr Ile Leu Ser  
225 230 235 240

Ala Tyr Val Val Leu Arg Leu Pro Tyr Gln Leu Ala Gln Leu Leu Tyr  
245 250 255

Leu Ala Phe Leu Trp Asp Val Tyr Ser Gly Tyr Leu Leu Trp Glu Ala  
260 265 270

Leu Val Tyr Ser Asp Tyr Leu Ile Leu Leu Asn Ser Cys Leu Ser Pro  
275 280 285

Phe Leu Cys Leu Met Ala Ser Ala Asp Leu Arg Thr Leu Leu Arg Ser  
290 295 300

Val Leu Ser Ser Phe Ala Ala Ala Leu Cys Glu Glu Arg Pro Gly Ser  
305 310 315 320

Phe Thr Pro Thr Glu Pro Gln Thr Gln Leu Asp Ser Glu Gly Pro Thr  
325 330 335

Leu Pro Glu Pro Met Ala Glu Ala Gln Ser Gln Met Asp Pro Val Ala  
340 345 350

Gln Pro Gln Val Asn Pro Thr Leu Gln Pro Arg Ser Asp Pro Thr Ala  
355 360 365

Gln Pro Gln Leu Asn Pro Thr Ala Gln Pro Gln Ser Asp Pro Thr Ala  
370 375 380

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Gln Pro Gln Leu Asn Leu Met Ala Gln Pro Gln Ser Asp Ser Val Ala  
385 390 395 400

Gln Pro Gln Ala Asp Thr Asn Val Gln Thr Pro Ala Pro Ala Ala Ser  
405 410 415

Ser Val Pro Ser Pro Cys Asp Glu Ala Ser Pro Thr Pro Ser Ser His  
420 425 430

Pro Thr Pro Gly Ala Leu Glu Asp Pro Ala Thr Pro Pro Ala Ser Glu  
435 440 445

Gly Glu Ser Pro Ser Ser Thr Pro Pro Glu Ala Ala Pro Gly Ala Gly  
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Pro Thr  
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gga aat gac caa gcc ctt ctt ctg ctt tgt ggc aag gag acc ctg atc 96  
Gly Asn Asp Gln Ala Leu Leu Leu Cys Gly Lys Glu Thr Leu Ile  
20 25 30  
ccg gtc ttc ctg atc ctt ttc att gcc ctg gtc ggg ctg gta gga aac 144  
Pro Val Phe Leu Ile Leu Phe Ile Ala Leu Val Gly Leu Val Gly Asn  
35 40 45  
ggg ttt gtg ctc tgg ctc ctg ggc ttc cgc atg cgc agg aac gcc ttc 192  
Gly Phe Val Leu Trp Leu Leu Gly Phe Arg Met Arg Arg Asn Ala Phe  
50 55 60  
tct gtc tac gtc ctc agc ctg gcc ggg gcc gac ttc ctc ttc ctc tgc 240  
Ser Val Tyr Val Leu Ser Leu Ala Gly Ala Asp Phe Leu Phe Leu Cys  
65 70 75 80  
ttc cag att ata aat tgc ctg gtg tac ctc agt aac ttc ttc tgt tcc 288  
Phe Gln Ile Ile Asn Cys Leu Val Tyr Leu Ser Asn Phe Phe Cys Ser  
85 90 95  
atc tcc atc aat ttc cct agc ttc ttc acc act gtg atg acc tgt gcc 336  
Ile Ser Ile Asn Phe Pro Ser Phe Phe Thr Thr Val Met Thr Cys Ala

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100	105	110	
tac ctt gca ggc ctg agc atg ctg agc acc gtc agc acc gag cgc tgc Tyr Leu Ala Gly Leu Ser Met Leu Ser Thr Val Ser Thr Glu Arg Cys 115 120 125			384
ctg tcc gtc ctg tgg ccc atc tgg tat cgc tgc cgc cgc ccc aga cac Leu Ser Val Leu Trp Pro Ile Trp Tyr Arg Cys Arg Arg Pro Arg His 130 135 140			432
ctg tca gcg gtc gtg tgt gtc ctg ctc tgg gcc ctg tcc cta ctg ctg Leu Ser Ala Val Val Cys Val Leu Leu Trp Ala Leu Ser Leu Leu Leu 145 150 155 160			480
agc atc ttg gaa ggg aag ttc tgt ggc ttc tta ttt agt gat ggt gac Ser Ile Leu Glu Gly Lys Phe Cys Gly Phe Leu Phe Ser Asp Gly Asp 165 170 175			528
tct ggt tgg tgt cag aca ttt gat ttc atc act gca gcg tgg ctg att Ser Gly Trp Cys Gln Thr Phe Asp Phe Ile Thr Ala Ala Trp Leu Ile 180 185 190			576
ttt tta ttc atg gtt ctc tgt ggg tcc agt ctg gcc ctg ctg gtc agg Phe Leu Phe Met Val Leu Cys Gly Ser Ser Leu Ala Leu Leu Val Arg 195 200 205			624
atc ctc tgt ggc tcc agg ggt ctg cca ctg acc agg ctg tac ctg acc Ile Leu Cys Gly Ser Arg Gly Leu Pro Leu Thr Arg Leu Tyr Leu Thr 210 215 220			672
atc ctg ctc aca gtg ctg gtg ttc ctc ctc tgc ggc ctg ccc ttt ggc Ile Leu Leu Thr Val Leu Val Phe Leu Leu Cys Gly Leu Pro Phe Gly 225 230 235 240			720
att cag tgg ttc cta ata tta tgg atc tgg aag gat tct gat gtc tta Ile Gln Trp Phe Leu Ile Leu Trp Ile Trp Lys Asp Ser Asp Val Leu 245 250 255			768
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agt gcc aac ccc atc att tac ttc ttc gtg ggc tct ttt agg aag cag Ser Ala Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg Lys Gln 275 280 285			864
tgg cgg ctg cag cag ccg atc ctc aag ctg gct ctc cag agg gct ctg Trp Arg Leu Gln Gln Pro Ile Leu Lys Leu Ala Leu Gln Arg Ala Leu 290 295 300			912
cag gac att gct gag gtg gat cac agt gaa gga tgc ttc cgt cag ggc Gln Asp Ile Ala Glu Val Asp His Ser Glu Gly Cys Phe Arg Gln Gly 305 310 315 320			960
acc ccg gag atg tcg aga agc agt ctg gtg tag Thr Pro Glu Met Ser Arg Ser Ser Leu Val 325 330			993

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 <213> Homo sapiens

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Met Asp Pro Thr Thr Pro Ala Trp Gly Thr Glu Ser Thr Thr Val Asn  
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Gly Asn Asp Gln Ala Leu Leu Leu Leu Cys Gly Lys Glu Thr Leu Ile  
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Pro Val Phe Leu Ile Leu Phe Ile Ala Leu Val Gly Leu Val Gly Asn  
35 40 45

Gly Phe Val Leu Trp Leu Leu Gly Phe Arg Met Arg Arg Asn Ala Phe  
50 55 60

Ser Val Tyr Val Leu Ser Leu Ala Gly Ala Asp Phe Leu Phe Leu Cys  
65 70 75 80

Phe Gln Ile Ile Asn Cys Leu Val Tyr Leu Ser Asn Phe Phe Cys Ser  
85 90 95

Ile Ser Ile Asn Phe Pro Ser Phe Phe Thr Thr Val Met Thr Cys Ala  
100 105 110

Tyr Leu Ala Gly Leu Ser Met Leu Ser Thr Val Ser Thr Glu Arg Cys  
115 120 125

Leu Ser Val Leu Trp Pro Ile Trp Tyr Arg Cys Arg Arg Pro Arg His  
130 135 140

Leu Ser Ala Val Val Cys Val Leu Leu Trp Ala Leu Ser Leu Leu Leu  
145 150 155 160

Ser Ile Leu Glu Gly Lys Phe Cys Gly Phe Leu Phe Ser Asp Gly Asp  
165 170 175

Ser Gly Trp Cys Gln Thr Phe Asp Phe Ile Thr Ala Ala Trp Leu Ile  
180 185 190

Phe Leu Phe Met Val Leu Cys Gly Ser Ser Leu Ala Leu Leu Val Arg  
195 200 205

Ile Leu Cys Gly Ser Arg Gly Leu Pro Leu Thr Arg Leu Tyr Leu Thr  
210 215 220

Ile Leu Leu Thr Val Leu Val Phe Leu Leu Cys Gly Leu Pro Phe Gly  
225 230 235 240

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Ile Gln Trp Phe Leu Ile Leu Trp Ile Trp Lys Asp Ser Asp Val Leu  
                   245                  250                  255

Phe Cys His Ile His Pro Val Ser Val Val Leu Ser Ser Leu Asn Ser  
                   260                  265                  270

Ser Ala Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg Lys Gln  
                   275                  280                  285

Trp Arg Leu Gln Gln Pro Ile Leu Lys Leu Ala Leu Gln Arg Ala Leu  
                   290                  295                  300

Gln Asp Ile Ala Glu Val Asp His Ser Glu Gly Cys Phe Arg Gln Gly  
                   305                  310                  315                  320

Thr Pro Glu Met Ser Arg Ser Ser Leu Val  
                   325                  330

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tat gca gct gct ttt gga aat tgc act gat gaa aac atc cca ctc aag 96  
 Tyr Ala Ala Ala Phe Gly Asn Cys Thr Asp Glu Asn Ile Pro Leu Lys  
                   20                  25                  30

atg cac tac ctc cct gtt att tat ggc att atc ttc ctc gtg gga ttt 144  
 Met His Tyr Leu Pro Val Ile Tyr Gly Ile Ile Phe Leu Val Gly Phe  
                   35                  40                  45

cca ggc aat gca gta gtg ata tcc act tac att ttc aaa atg aga cct 192  
 Pro Gly Asn Ala Val Val Ile Ser Thr Tyr Ile Phe Lys Met Arg Pro  
                   50                  55                  60

tgg aag agc agc acc atc att atg ctg aac ctg gcc tgc aca gat ctg 240  
 Trp Lys Ser Ser Thr Ile Ile Met Leu Asn Leu Ala Cys Thr Asp Leu  
 65                  70                  75                  80

ctg tat ctg acc agc ctc ccc ttc ctg att cac tac tat gcc agt ggc 288  
 Leu Tyr Leu Thr Ser Leu Pro Phe Leu Ile His Tyr Tyr Ala Ser Gly  
                   85                  90                  95

gaa aac tgg atc ttt gga gat ttc atg tgt aag ttt atc cgc ttc agc 336  
 Glu Asn Trp Ile Phe Gly Asp Phe Met Cys Lys Phe Ile Arg Phe Ser  
                   100                  105                  110

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ttc cat ttc aac ctg tat agc agc atc ctc ttc ctc acc tgt ttc agc	384
Phe His Phe Asn Leu Tyr Ser Ser Ile Leu Phe Leu Thr Cys Phe Ser	
115 120 125	
atc ttc cgc tac tgt gtg atc att cac cca atg agc tgc ttt tcc att	432
Ile Phe Arg Tyr Cys Val Ile Ile His Pro Met Ser Cys Phe Ser Ile	
130 135 140	
cac aaa act cga tgt gca gtt gta gcc tgt gct gtg gtg tgg atc att	480
His Lys Thr Arg Cys Ala Val Val Ala Cys Ala Val Val Trp Ile Ile	
145 150 155 160	
tca ctg gta gct gtc att ccg atg acc ttc ttg atc aca tca acc aac	528
Ser Leu Val Ala Val Ile Pro Met Thr Phe Leu Ile Thr Ser Thr Asn	
165 170 175	
agg acc aac aga tca gcc tgt ctc gac ctc acc agt tgc gat gaa ctc	576
Arg Thr Asn Arg Ser Ala Cys Leu Asp Leu Thr Ser Ser Asp Glu Leu	
180 185 190	
aat act att aag tgg tac aac ctg att ttg act gca act act ttc tgc	624
Asn Thr Ile Lys Trp Tyr Asn Leu Ile Leu Thr Ala Thr Thr Phe Cys	
195 200 205	
ctc ccc ttg gtg ata gtg aca ctt tgc tat acc acg att atc cac act	672
Leu Pro Leu Val Ile Val Ile Leu Cys Tyr Thr Thr Ile Ile His Thr	
210 215 220	
ctg acc cat gga ctg caa act gac agc tgc ctt aag cag aaa gca cga	720
Leu Thr His Gly Leu Gln Thr Asp Ser Cys Leu Lys Gln Lys Ala Arg	
225 230 235 240	
agg cta acc att ctg cta ctc ctt gca ttt tac gta tgt ttt tta ccc	768
Arg Leu Thr Ile Leu Leu Leu Leu Ala Phe Tyr Val Cys Phe Leu Pro	
245 250 255	
ttc cat atc ttg agg gtc att cgg atc gaa tct cgc ctg ctt tca atc	816
Phe His Ile Leu Arg Val Ile Arg Ile Glu Ser Arg Leu Leu Ser Ile	
260 265 270	
agt tgt tcc att gag aat cag atc cat gaa gct tac atc gtt tct aga	864
Ser Cys Ser Ile Glu Asn Gln Ile His Glu Ala Tyr Ile Val Ser Arg	
275 280 285	
cca tta gct gct ctg aac acc ttt ggt aac ctg tta cta tat gtg gtg	912
Pro Leu Ala Ala Leu Asn Thr Phe Gly Asn Leu Leu Leu Tyr Val Val	
290 295 300	
gtc agc gac aac ttt cag cag gct gtc tgc tca aca gtg aga tgc aaa	960
Val Ser Asp Asn Phe Gln Gln Ala Val Cys Ser Thr Val Arg Cys Lys	
305 310 315 320	
gta agc ggg aac ctt gag caa gca aag aaa att agt tac tca aac aac	1008
Val Ser Gly Asn Leu Glu Gln Ala Lys Lys Ile Ser Tyr Ser Asn Asn	
325 330 335	
cct tga	1014
Pro	

<210> 14  
<211> 337

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<212> PRT  
<213> Homo sapiens

<400> 14

Met Asn Glu Pro Leu Asp Tyr Leu Ala Asn Ala Ser Asp Phe Pro Asp  
1 5 10 15

Tyr Ala Ala Ala Phe Gly Asn Cys Thr Asp Glu Asn Ile Pro Leu Lys  
20 25 30

Met His Tyr Leu Pro Val Ile Tyr Gly Ile Ile Phe Leu Val Gly Phe  
35 40 45

Pro Gly Asn Ala Val Val Ile Ser Thr Tyr Ile Phe Lys Met Arg Pro  
50 55 60

Trp Lys Ser Ser Thr Ile Ile Met Leu Asn Leu Ala Cys Thr Asp Leu  
65 70 75 80

Leu Tyr Leu Thr Ser Leu Pro Phe Leu Ile His Tyr Tyr Ala Ser Gly  
85 90 95

Glu Asn Trp Ile Phe Gly Asp Phe Met Cys Lys Phe Ile Arg Phe Ser  
100 105 110

Phe His Phe Asn Leu Tyr Ser Ser Ile Leu Phe Leu Thr Cys Phe Ser  
115 120 125

Ile Phe Arg Tyr Cys Val Ile Ile His Pro Met Ser Cys Phe Ser Ile  
130 135 140

His Lys Thr Arg Cys Ala Val Val Ala Cys Ala Val Val Trp Ile Ile  
145 150 155 160

Ser Leu Val Ala Val Ile Pro Met Thr Phe Leu Ile Thr Ser Thr Asn  
165 170 175

Arg Thr Asn Arg Ser Ala Cys Leu Asp Leu Thr Ser Ser Asp Glu Leu  
180 185 190

Asn Thr Ile Lys Trp Tyr Asn Leu Ile Leu Thr Ala Thr Thr Phe Cys  
195 200 205

Leu Pro Leu Val Ile Val Thr Leu Cys Tyr Thr Thr Ile Ile His Thr  
210 215 220

Leu Thr His Gly Leu Gln Thr Asp Ser Cys Leu Lys Gln Lys Ala Arg  
225 230 235 240

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Arg Leu Thr Ile Leu Leu Leu Ala Phe Tyr Val Cys Phe Leu Pro  
245 250 255

Phe His Ile Leu Arg Val Ile Arg Ile Glu Ser Arg Leu Leu Ser Ile  
260 265 270

Ser Cys Ser Ile Glu Asn Gln Ile His Glu Ala Tyr Ile Val Ser Arg  
275 280 285

Pro Leu Ala Ala Leu Asn Thr Phe Gly Asn Leu Leu Leu Tyr Val Val  
290 295 300

Val Ser Asp Asn Phe Gln Gln Ala Val Cys Ser Thr Val Arg Cys Lys  
305 310 315 320

Val Ser Gly Asn Leu Glu Gln Ala Lys Lys Ile Ser Tyr Ser Asn Asn  
325 330 335

Pro

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<211> 1011  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(1011)  
<223>

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Met Asn Asn Asn Thr Cys Ile Gln Pro Ser Met Ile Ser Ser Met  
1 5 10 15

gct tta cca atc att tac atc ctc ctt tgt att gtt ggt gtt ttt gga 96  
Ala Leu Pro Ile Ile Tyr Ile Leu Leu Cys Ile Val Gly Val Phe Gly  
20 25 30

aac act ctc tct caa tgg ata ttt tta aca aaa ata ggt aaa aaa aca 144  
Asn Thr Leu Ser Gln Trp Ile Phe Leu Thr Lys Ile Gly Lys Lys Thr  
35 40 45

tca acg cac atc tac ctg tca cac ctt gtg act gca aac tta ctt gtg 192  
Ser Thr His Ile Tyr Leu Ser His Leu Val Thr Ala Asn Leu Leu Val  
50 55 60

tgc agt gcc atg cct ttc atg agt atc tat ttc ctg aaa ggt ttc caa 240  
Cys Ser Ala Met Pro Phe Met Ser Ile Tyr Phe Leu Lys Gly Phe Gln  
65 70 75 80

tgg gaa tat caa tct gct caa tgc aga gtg gtc aat ttt ctg gga act 288  
Trp Glu Tyr Gln Ser Ala Gln Cys Arg Val Val Asn Phe Leu Gly Thr  
85 90 95



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85								90				95				
cta	tcc	atg	cat	gca	agt	atg	ttt	gtc	agt	ctc	tta	att	tta	agt	tgg	336
Leu	Ser	Met	His	Ala	Ser	Met	Phe	Val	Ser	Leu	Leu	Ile	Leu	Ser	Trp	
			100					105					110			
att	gcc	ata	agc	cgc	tat	gct	acc	tta	atg	caa	aag	gat	tcc	tcg	caa	384
Ile	Ala	Ile	Ser	Arg	Tyr	Ala	Thr	Leu	Met	Gln	Lys	Asp	Ser	Ser	Gln	
		115					120					125				
gag	act	act	tca	tgc	tat	gag	aaa	ata	ttt	tat	ggc	cat	tta	ctg	aaa	432
Glu	Thr	Thr	Ser	Cys	Tyr	Glu	Lys	Ile	Phe	Tyr	Gly	His	Leu	Leu	Lys	
	130					135					140					
aaa	ttt	cgc	cag	ccc	aac	ttt	gct	aga	aaa	cta	tgc	att	tac	ata	tgg	480
Lys	Phe	Arg	Gln	Pro	Asn	Phe	Ala	Arg	Lys	Leu	Cys	Ile	Tyr	Ile	Trp	
	145				150					155					160	
gga	gtt	gta	ctg	ggc	ata	atc	att	cca	gtt	acc	gta	tac	tac	tca	gtc	528
Gly	Val	Val	Leu	Gly	Ile	Ile	Ile	Pro	Val	Thr	Val	Tyr	Tyr	Ser	Val	
			165					170						175		
ata	gag	gct	aca	gaa	gga	gaa	gag	agc	cta	tgc	tac	aat	cgg	cag	atg	576
Ile	Glu	Ala	Thr	Glu	Gly	Glu	Glu	Ser	Leu	Cys	Tyr	Asn	Arg	Gln	Met	
			180					185					190			
gaa	cta	gga	gcc	atg	atc	tct	cag	att	gca	ggc	ctc	att	gga	acc	aca	624
Glu	Leu	Gly	Ala	Met	Ile	Ser	Gln	Ile	Ala	Gly	Leu	Ile	Gly	Thr	Thr	
		195					200					205				
ttt	att	gga	ttt	tcc	ttt	tta	gta	gta	cta	aca	tca	tac	tac	tct	ttt	672
Phe	Ile	Gly	Phe	Ser	Phe	Leu	Val	Val	Leu	Thr	Ser	Tyr	Tyr	Ser	Phe	
	210					215					220					
gta	agc	cat	ctg	aga	aaa	ata	aga	acc	tgt	acg	tcc	att	atg	gag	aaa	720
Val	Ser	His	Leu	Arg	Lys	Ile	Arg	Thr	Cys	Thr	Ser	Ile	Met	Glu	Lys	
	225				230				235					240		
gat	ttg	act	tac	agt	tct	gtg	aaa	aga	cat	ctt	ttg	gtc	atc	cag	att	768
Asp	Leu	Thr	Tyr	Ser	Ser	Val	Lys	Arg	His	Leu	Leu	Val	Ile	Gln	Ile	
				245					250					255		
cta	cta	ata	gtt	tgc	ttc	ctt	cct	tat	agt	att	ttt	aaa	ccc	att	ttt	816
Leu	Leu	Ile	Val	Cys	Phe	Leu	Pro	Tyr	Ser	Ile	Phe	Lys	Pro	Ile	Phe	
			260					265					270			
tat	gtt	cta	cac	caa	aga	gat	aac	tgt	cag	caa	ttg	aat	tat	tta	ata	864
Tyr	Val	Leu	His	Gln	Arg	Asp	Asn	Cys	Gln	Gln	Leu	Asn	Tyr	Leu	Ile	
		275					280					285				
gaa	aca	aaa	aac	att	ctc	acc	tgt	ctt	gct	tcg	gcc	aga	agt	agc	aca	912
Glu	Thr	Lys	Asn	Ile	Leu	Thr	Cys	Leu	Ala	Ser	Ala	Arg	Ser	Ser	Thr	
	290					295					300					
gac	ccc	att	ata	ttt	ctt	tta	tta	gat	aaa	aca	ttc	aag	aag	aca	cta	960
Asp	Pro	Ile	Ile	Phe	Leu	Leu	Leu	Asp	Lys	Thr	Phe	Lys	Lys	Thr	Leu	
	305				310					315					320	
tat	aat	ctc	ttt	aca	aag	tct	aat	tca	gca	cat	atg	caa	tca	tat	ggc	1008
Tyr	Asn	Leu	Phe	Thr	Lys	Ser	Asn	Ser	Ala	His	Met	Gln	Ser	Tyr	Gly	
				325					330					335		
tga																1011

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<210> 16  
<211> 336  
<212> PRT  
<213> Homo sapiens

<400> 16

Met Asn Asn Asn Thr Thr Cys Ile Gln Pro Ser Met Ile Ser Ser Met  
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Ala Leu Pro Ile Ile Tyr Ile Leu Leu Cys Ile Val Gly Val Phe Gly  
20 25 30

Asn Thr Leu Ser Gln Trp Ile Phe Leu Thr Lys Ile Gly Lys Lys Thr  
35 40 45

Ser Thr His Ile Tyr Leu Ser His Leu Val Thr Ala Asn Leu Leu Val  
50 55 60

Cys Ser Ala Met Pro Phe Met Ser Ile Tyr Phe Leu Lys Gly Phe Gln  
65 70 75 80

Trp Glu Tyr Gln Ser Ala Gln Cys Arg Val Val Asn Phe Leu Gly Thr  
85 90 95

Leu Ser Met His Ala Ser Met Phe Val Ser Leu Leu Ile Leu Ser Trp  
100 105 110

Ile Ala Ile Ser Arg Tyr Ala Thr Leu Met Gln Lys Asp Ser Ser Gln  
115 120 125

Glu Thr Thr Ser Cys Tyr Glu Lys Ile Phe Tyr Gly His Leu Leu Lys  
130 135 140

Lys Phe Arg Gln Pro Asn Phe Ala Arg Lys Leu Cys Ile Tyr Ile Trp  
145 150 155 160

Gly Val Val Leu Gly Ile Ile Ile Pro Val Thr Val Tyr Tyr Ser Val  
165 170 175

Ile Glu Ala Thr Glu Gly Glu Glu Ser Leu Cys Tyr Asn Arg Gln Met  
180 185 190

Glu Leu Gly Ala Met Ile Ser Gln Ile Ala Gly Leu Ile Gly Thr Thr  
195 200 205

Phe Ile Gly Phe Ser Phe Leu Val Val Leu Thr Ser Tyr Tyr Ser Phe  
210 215 220

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Val Ser His Leu Arg Lys Ile Arg Thr Cys Thr Ser Ile Met Glu Lys  
225 230 235 240

Asp Leu Thr Tyr Ser Ser Val Lys Arg His Leu Leu Val Ile Gln Ile  
245 250 255

Leu Leu Ile Val Cys Phe Leu Pro Tyr Ser Ile Phe Lys Pro Ile Phe  
260 265 270

Tyr Val Leu His Gln Arg Asp Asn Cys Gln Gln Leu Asn Tyr Leu Ile  
275 280 285

Glu Thr Lys Asn Ile Leu Thr Cys Leu Ala Ser Ala Arg Ser Ser Thr  
290 295 300

Asp Pro Ile Ile Phe Leu Leu Leu Asp Lys Thr Phe Lys Lys Thr Leu  
305 310 315 320

Tyr Asn Leu Phe Thr Lys Ser Asn Ser Ala His Met Gln Ser Tyr Gly  
325 330 335

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<211> 1041  
<212> DNA  
<213> Homo sapiens

<220>  
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atg tac aac ggg tcg tgc tgc cgc atc gag ggg gac acc atc tcc cag 48  
Met Tyr Asn Gly Ser Cys Cys Arg Ile Glu Gly Asp Thr Ile Ser Gln  
1 5 10 15

gtg atg ccg ccg ctg ctc att gtg gcc ttt gtg ctg ggc gca cta ggc 96  
Val Met Pro Pro Leu Leu Ile Val Ala Phe Val Leu Gly Ala Leu Gly  
20 25 30

aat ggg gtc gcc ctg tgt ggt ttc tgc ttc cac atg aag acc tgg aag 144  
Asn Gly Val Ala Leu Cys Gly Phe Cys Phe His Met Lys Thr Trp Lys  
35 40 45

ccc agc act gtt tac ctt ttc aat ttg gcc gtg gct gat ttc ctc ctt 192  
Pro Ser Thr Val Tyr Leu Phe Asn Leu Ala Val Ala Asp Phe Leu Leu  
50 55 60

atg atc tgc ctg cct ttt cgg aca gac tat tac ctc aga cgt aga cac 240  
Met Ile Cys Leu Pro Phe Arg Thr Asp Tyr Tyr Leu Arg Arg Arg His  
65 70 75 80

tgg gct ttt ggg gac att ccc tgc cga gtg ggg ctc ttc acg ttg gcc 288  
Trp Ala Phe Gly Asp Ile Pro Cys Arg Val Gly Leu Phe Thr Leu Ala  
85 90 95

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90

85										95										
atg	aac	agg	gcc	ggg	agc	atc	gtg	ttc	ctt	acg	gtg	gtg	gct	gcg	gac	336				
Met	Asn	Arg	Ala	Gly	Ser	Ile	Val	Phe	Leu	Thr	Val	Val	Ala	Ala	Asp					
			100					105					110							
agg	tat	ttc	aaa	gtg	gtc	cac	ccc	cac	cac	gcg	gtg	aac	act	atc	tcc	384				
Arg	Tyr	Phe	Lys	Val	Val	His	Pro	His	His	Ala	Val	Asn	Thr	Ile	Ser					
		115					120					125								
acc	cgg	gtg	gcg	gct	ggc	atc	gtc	tgc	acc	ctg	tgg	gcc	ctg	gtc	atc	432				
Thr	Arg	Val	Ala	Ala	Gly	Ile	Val	Cys	Thr	Leu	Trp	Ala	Leu	Val	Ile					
	130					135					140									
ctg	gga	aca	gtg	tat	ctt	ttg	ctg	gag	aac	cat	ctc	tgc	gtg	caa	gag	480				
Leu	Gly	Thr	Val	Tyr	Leu	Leu	Leu	Glu	Asn	His	Leu	Cys	Val	Gln	Glu					
					150					155					160					
acg	gcc	gtc	tcc	tgt	gag	agc	ttc	atc	atg	gag	tcg	gcc	aac	ggc	tgg	528				
Thr	Ala	Val	Ser	Cys	Glu	Ser	Phe	Ile	Met	Glu	Ser	Ala	Asn	Gly	Trp					
				165					170					175						
cat	gac	atc	atg	ttc	cag	ctg	gag	ttc	ttt	atg	ccc	ctc	ggc	atc	atc	576				
His	Asp	Ile	Met	Phe	Gln	Leu	Glu	Phe	Phe	Met	Pro	Leu	Gly	Ile	Ile					
			180					185					190							
tta	ttt	tgc	tcc	ttc	aag	att	gtt	tgg	agc	ctg	agg	cgg	agg	cag	cag	624				
Leu	Phe	Cys	Ser	Phe	Lys	Ile	Val	Trp	Ser	Leu	Arg	Arg	Arg	Gln	Gln					
		195					200					205								
ctg	gcc	aga	cag	gct	cgg	atg	aag	aag	gcg	acc	cgg	ttc	atc	atg	gtg	672				
Leu	Ala	Arg	Gln	Ala	Arg	Met	Lys	Lys	Ala	Thr	Arg	Phe	Ile	Met	Val					
	210					215					220									
gtg	gca	att	gtg	ttc	atc	aca	tgc	tac	ctg	ccc	agc	gtg	tct	gct	aga	720				
Val	Ala	Ile	Val	Phe	Ile	Thr	Cys	Tyr	Leu	Pro	Ser	Val	Ser	Ala	Arg					
	225				230					235					240					
ctc	tat	ttc	ctc	tgg	acg	gtg	ccc	tcg	agt	gcc	tgc	gat	ccc	tct	gtc	768				
Leu	Tyr	Phe	Leu	Trp	Thr	Val	Pro	Ser	Ser	Ala	Cys	Asp	Pro	Ser	Val					
				245					250					255						
cat	ggg	gcc	ctg	cac	ata	acc	ctc	agc	ttc	acc	tac	atg	aac	agc	atg	816				
His	Gly	Ala	Leu	His	Ile	Thr	Leu	Ser	Phe	Thr	Tyr	Met	Asn	Ser	Met					
			260					265					270							
ctg	gat	ccc	ctg	gtg	tat	tat	ttt	tca	agc	ccc	tcc	ttt	ccc	aaa	ttc	864				
Leu	Asp	Pro	Leu	Val	Tyr	Tyr	Phe	Ser	Ser	Pro	Ser	Phe	Pro	Lys	Phe					
		275					280					285								
tac	aac	aag	ctc	aaa	atc	tgc	agt	ctg	aaa	ccc	aag	cag	cca	gga	cac	912				
Tyr	Asn	Lys	Leu	Lys	Ile	Cys	Ser	Leu	Lys	Pro	Lys	Gln	Pro	Gly	His					
	290				295					300										
tca	aaa	aca	caa	agg	ccg	gaa	gag	atg	cca	att	tcg	aac	ctc	ggt	cgc	960				
Ser	Lys	Thr	Gln	Arg	Pro	Glu	Glu	Met	Pro	Ile	Ser	Asn	Leu	Gly	Arg					
					310					315					320					
agg	agt	tgc	atc	agt	gtg	gca	aat	agt	ttc	caa	agc	cag	tct	gat	ggg	1008				
Arg	Ser	Cys	Ile	Ser	Val	Ala	Asn	Ser	Phe	Gln	Ser	Gln	Ser	Asp	Gly					
				325					330					335						
caa	tgg	gat	ccc	cac	att	gtt	gag	tgg	cac	tga						1041				

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Gln Trp Asp Pro His Ile Val Glu Trp His  
340 345

<210> 18  
<211> 346  
<212> PRT  
<213> Homo sapiens

<400> 18

Met Tyr Asn Gly Ser Cys Cys Arg Ile Glu Gly Asp Thr Ile Ser Gln  
1 5 10 15

Val Met Pro Pro Leu Leu Ile Val Ala Phe Val Leu Gly Ala Leu Gly  
20 25 30

Asn Gly Val Ala Leu Cys Gly Phe Cys Phe His Met Lys Thr Trp Lys  
35 40 45

Pro Ser Thr Val Tyr Leu Phe Asn Leu Ala Val Ala Asp Phe Leu Leu  
50 55 60

Met Ile Cys Leu Pro Phe Arg Thr Asp Tyr Tyr Leu Arg Arg Arg His  
65 70 75 80

Trp Ala Phe Gly Asp Ile Pro Cys Arg Val Gly Leu Phe Thr Leu Ala  
85 90 95

Met Asn Arg Ala Gly Ser Ile Val Phe Leu Thr Val Val Ala Ala Asp  
100 105 110

Arg Tyr Phe Lys Val Val His Pro His His Ala Val Asn Thr Ile Ser  
115 120 125

Thr Arg Val Ala Ala Gly Ile Val Cys Thr Leu Trp Ala Leu Val Ile  
130 135 140

Leu Gly Thr Val Tyr Leu Leu Leu Glu Asn His Leu Cys Val Gln Glu  
145 150 155 160

Thr Ala Val Ser Cys Glu Ser Phe Ile Met Glu Ser Ala Asn Gly Trp  
165 170 175

His Asp Ile Met Phe Gln Leu Glu Phe Phe Met Pro Leu Gly Ile Ile  
180 185 190

Leu Phe Cys Ser Phe Lys Ile Val Trp Ser Leu Arg Arg Arg Gln Gln  
195 200 205

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Leu Ala Arg Gln Ala Arg Met Lys Lys Ala Thr Arg Phe Ile Met Val  
210 215 220

Val Ala Ile Val Phe Ile Thr Cys Tyr Leu Pro Ser Val Ser Ala Arg  
225 230 235 240

Leu Tyr Phe Leu Trp Thr Val Pro Ser Ser Ala Cys Asp Pro Ser Val  
245 250 255

His Gly Ala Leu His Ile Thr Leu Ser Phe Thr Tyr Met Asn Ser Met  
260 265 270

Leu Asp Pro Leu Val Tyr Tyr Phe Ser Ser Pro Ser Phe Pro Lys Phe  
275 280 285

Tyr Asn Lys Leu Lys Ile Cys Ser Leu Lys Pro Lys Gln Pro Gly His  
290 295 300

Ser Lys Thr Gln Arg Pro Glu Glu Met Pro Ile Ser Asn Leu Gly Arg  
305 310 315 320

Arg Ser Cys Ile Ser Val Ala Asn Ser Phe Gln Ser Gln Ser Asp Gly  
325 330 335

Gln Trp Asp Pro His Ile Val Glu Trp His  
340 345

<210> 19  
<211> 1059  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(1059)  
<223>

<400> 19  
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Met Gly Pro Gly Glu Ala Leu Leu Ala Gly Leu Leu Val Met Val Leu  
1 5 10 15

gcc gtg gcg ctg cta tcc aac gca ctg gtg ctg ctt tgt tgc gcc tac 96  
Ala Val Ala Leu Leu Ser Asn Ala Leu Val Leu Leu Cys Cys Ala Tyr  
20 25 30

agc gct gag ctc cgc act cga gcc tca ggc gtc ctc ctg gtg aat ctg 144  
Ser Ala Glu Leu Arg Thr Arg Ala Ser Gly Val Leu Leu Val Asn Leu  
35 40 45

tct ctg ggc cac ctg ctg ctg gcg gcg ctg gac atg ccc ttc acg ctg 192  
Ser Leu Gly His Leu Leu Leu Ala Ala Leu Asp Met Pro Phe Thr Leu  
50 55 60

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ctc ggt gtg atg cgc ggg cgg aca ccg tcg gcg ccc ggc gca tgc caa Leu Gly Val Met Arg Gly Arg Thr Pro Ser Ala Pro Gly Ala Cys Gln 65 70 75 80	240
gtc att ggc ttc ctg gac acc ttc ctg gcg tcc aac gcg gcg ctg agc Val Ile Gly Phe Leu Asp Thr Phe Leu Ala Ser Asn Ala Ala Leu Ser 85 90 95	288
gtg gcg gcg ctg agc gca gac cag tgg ctg gca gtg ggc ttc cca ctg Val Ala Ala Leu Ser Ala Asp Gln Trp Leu Ala Val Gly Phe Pro Leu 100 105 110	336
cgc tac gcc gga cgc ctg cga ccg cgc tat gcc ggc ctg ctg ctg ggc Arg Tyr Ala Gly Arg Leu Arg Pro Arg Tyr Ala Gly Leu Leu Leu Gly 115 120 125	384
tgt gcc tgg gga cag tcg ctg gcc ttc tca ggc gct gca ctt ggc tgc Cys Ala Trp Gly Gln Ser Leu Ala Phe Ser Gly Ala Ala Leu Gly Cys 130 135 140	432
tcg tgg ctt ggc tac agc agc gcc ttc gcg tcc tgt tcg ctg cgc ctg Ser Trp Leu Gly Tyr Ser Ser Ala Phe Ala Ser Cys Ser Leu Arg Leu 145 150 155 160	480
ccg ccc gag cct gag cgt ccg cgc ttc gca gcc ttc acc gcc acg ctc Pro Pro Glu Pro Glu Arg Pro Arg Phe Ala Ala Phe Thr Ala Thr Leu 165 170 175	528
cat gcc gtg ggc ttc gtg ctg ccg ctg gcg gtg ctc tgc ctc acc tcg His Ala Val Gly Phe Val Leu Pro Leu Ala Val Leu Cys Leu Thr Ser 180 185 190	576
ctc cag gtg cac cgg gtg gca cgc aga cac tgc cag cgc atg gac acc Leu Gln Val His Arg Val Ala Arg Arg His Cys Gln Arg Met Asp Thr 195 200 205	624
gtc acc atg aag gcg ctc gcg ctg ctc gcc gac ctg cac ccc agg tat Val Thr Met Lys Ala Leu Ala Leu Leu Ala Asp Leu His Pro Arg Tyr 210 215 220	672
tgg ccc agt gca tgc cga cag gcc cag gcc agg gac ttg ggc gct ccc Trp Pro Ser Ala Cys Arg Gln Ala Gln Ala Arg Asp Leu Gly Ala Pro 225 230 235 240	720
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cac acc cct cct gtg cat ggc tgt ggg tct gag gca tct gct tgt ttc 1008  
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325 330 335

tgc cca ctg ctg acc cag tgc cct tgc atg gac ttg ggc ttc aag tct 1056  
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Ser Ala Glu Leu Arg Thr Arg Ala Ser Gly Val Leu Leu Val Asn Leu  
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Ser Leu Gly His Leu Leu Leu Ala Ala Leu Asp Met Pro Phe Thr Leu  
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Leu Gly Val Met Arg Gly Arg Thr Pro Ser Ala Pro Gly Ala Cys Gln  
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Val Ile Gly Phe Leu Asp Thr Phe Leu Ala Ser Asn Ala Ala Leu Ser  
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Val Ala Ala Leu Ser Ala Asp Gln Trp Leu Ala Val Gly Phe Pro Leu  
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Arg Tyr Ala Gly Arg Leu Arg Pro Arg Tyr Ala Gly Leu Leu Leu Gly  
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Cys Ala Trp Gly Gln Ser Leu Ala Phe Ser Gly Ala Ala Leu Gly Cys  
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Ser Trp Leu Gly Tyr Ser Ser Ala Phe Ala Ser Cys Ser Leu Arg Leu  
145 150 155 160

Pro Pro Glu Pro Glu Arg Pro Arg Phe Ala Ala Phe Thr Ala Thr Leu  
165 170 175



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His Ala Val Gly Phe Val Leu Pro Leu Ala Val Leu Cys Leu Thr Ser  
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Leu Gln Val His Arg Val Ala Arg Arg His Cys Gln Arg Met Asp Thr  
195 200 205

Val Thr Met Lys Ala Leu Ala Leu Leu Ala Asp Leu His Pro Arg Tyr  
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Trp Pro Ser Ala Cys Arg Gln Ala Gln Ala Arg Asp Leu Gly Ala Pro  
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Trp Ala Val Gly Leu Arg Ser Leu Trp Ala Ser Pro Pro Leu Leu Cys  
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Pro Glu Phe Thr Ser His Ser Thr Ala Pro Ala Arg Cys Ser Gln Gly  
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Phe Pro Val Gly Ser Leu Val Gln Thr Leu Arg Gly Pro Leu Pro Pro  
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Gly Ile Cys Ala His Ser Ala Gln Gly Ala Leu Arg Arg Ala Val Gly  
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Cys Ala Ser Pro Gly Gly Val Pro Arg Ala Leu Leu Trp Ala Ala Arg  
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Cys	Trp	Leu	Leu	Leu	Pro	Glu	Pro	Thr	Ala	Gly	Trp	Ala	Ala	His	Gly	
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Tyr	Trp	Ser	Cys	Leu	Leu	Val	Tyr	Leu	Ala	Pro	Asn	Phe	Ser	Phe	Leu	
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Val	Gly	Ala	Ala	Ala	Phe	Leu	Ser	Val	Arg	Val	Leu	Ala	Thr	Ala	His	
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cgc	cag	ctg	cag	gac	atc	tgc	cgg	ctg	gag	cgg	gca	gtg	tgc	cgc	gat	624
Arg	Gln	Leu	Gln	Asp	Ile	Cys	Arg	Leu	Glu	Arg	Ala	Val	Cys	Arg	Asp	
		195					200					205				
gag	ccc	tcc	gcc	ctg	gcc	cgg	gcc	ctt	acc	tgg	agg	cag	gca	agg	gca	672
Glu	Pro	Ser	Ala	Leu	Ala	Arg	Ala	Leu	Thr	Trp	Arg	Gln	Ala	Arg	Ala	
	210					215					220					
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Gln	Ala	Gly	Ala	Met	Leu	Leu	Phe	Gly	Leu	Cys	Trp	Gly	Pro	Tyr	Val	
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gcc	aca	ctg	ctc	ctc	tca	gtc	ctg	gcc	tat	gag	cag	cgc	ccg	cca	ctg	768
Ala	Thr	Leu	Leu	Leu	Ser	Val	Leu	Ala	Tyr	Glu	Gln	Arg	Pro	Pro	Leu	
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Gly	Pro	Gly	Thr	Leu	Leu	Ser	Leu	Leu	Ser	Leu	Gly	Ser	Ala	Ser	Ala	
			260				265						270			
gcg	gca	gtg	ccc	gta	gcc	atg	ggg	ctg	ggc	gat	cag	cgc	tac	aca	gcc	864
Ala	Ala	Val	Pro	Val	Ala	Met	Gly	Leu	Gly	Asp	Gln	Arg	Tyr	Thr	Ala	
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ccc tgg agg cag ccg ccc aaa ggt gcc tgc agg ggc tgt ggg gaa gag 912  
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cct ccc ggg aca gtc ccg gcc cca gca ttg cct acc acc caa gca gcc 960  
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aaa gca gtg tcg acc tgg act tga 984  
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Leu Leu Leu Ala Leu Gly Ile Ala Gly Thr Ala Ala Cys Ala Ala Thr  
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Cys Trp Leu Leu Leu Pro Glu Pro Thr Ala Gly Trp Ala Ala His Gly  
50 55 60

Ser Gly Ile Ala Thr Leu Pro Gly Leu Trp Asn Gln Ser Arg Arg Gly  
65 70 75 80

Tyr Trp Ser Cys Leu Leu Val Tyr Leu Ala Pro Asn Phe Ser Phe Leu  
85 90 95

Ser Leu Leu Ala Asn Leu Leu Leu Val His Gly Glu Arg Tyr Met Ala  
100 105 110

Val Leu Arg Pro Leu Gln Pro Pro Gly Ser Ile Arg Leu Ala Leu Leu  
115 120 125

Leu Thr Trp Ala Gly Pro Leu Leu Phe Ala Ser Leu Pro Ala Leu Gly  
130 135 140

Trp Asn His Trp Thr Pro Gly Ala Asn Cys Ser Ser Gln Ala Ile Phe  
145 150 155 160

Pro Ala Pro Tyr Leu Tyr Leu Glu Val Tyr Gly Leu Leu Leu Pro Ala  
165 170 175

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Val Gly Ala Ala Phe Leu Ser Val Arg Val Leu Ala Thr Ala His  
180 185 190

Arg Gln Leu Gln Asp Ile Cys Arg Leu Glu Arg Ala Val Cys Arg Asp  
195 200 205

Glu Pro Ser Ala Leu Ala Arg Ala Leu Thr Trp Arg Gln Ala Arg Ala  
210 215 220

Gln Ala Gly Ala Met Leu Leu Phe Gly Leu Cys Trp Gly Pro Tyr Val  
225 230 235 240

Ala Thr Leu Leu Leu Ser Val Leu Ala Tyr Glu Gln Arg Pro Pro Leu  
245 250 255

Gly Pro Gly Thr Leu Leu Ser Leu Leu Ser Leu Gly Ser Ala Ser Ala  
260 265 270

Ala Ala Val Pro Val Ala Met Gly Leu Gly Asp Gln Arg Tyr Thr Ala  
275 280 285

Pro Trp Arg Gln Pro Pro Lys Gly Ala Cys Arg Gly Cys Gly Glu Glu  
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Lys Ala Val Ser Thr Trp Thr  
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gcc ctg atc cag ctc atc agc aag aca ccc tgc atg ccc caa gca gcc 96  
Ala Leu Ile Gln Leu Ile Ser Lys Thr Pro Cys Met Pro Gln Ala Ala  
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agc aac act tcc ttg ggc ctg ggg gac ctc agg gtg ccc agc tcc atg 144  
Ser Asn Thr Ser Leu Gly Leu Gly Asp Leu Arg Val Pro Ser Ser Met  
Page 36

35			40			45												
ctg	tac	tgg	ctt	ttc	ctt	ccc	tca	agc	ctg	ctg	gct	gca	gcc	aca	ctg			192
Leu	Tyr	Trp	Leu	Phe	Leu	Pro	Ser	Ser	Leu	Leu	Ala	Ala	Ala	Thr	Leu			
	50					55					60							
gct	gtc	agc	ccc	ctg	ctg	ctg	gtg	acc	atc	ctg	cgg	aac	caa	cgg	ctg			240
Ala	Val	Ser	Pro	Leu	Leu	Leu	Val	Thr	Ile	Leu	Arg	Asn	Gln	Arg	Leu			
65				70						75					80			
cga	cag	gag	ccc	cac	tac	ctg	ctc	ccg	gct	aac	atc	ctg	ctc	tca	gac			288
Arg	Gln	Glu	Pro	His	Tyr	Leu	Leu	Pro	Ala	Asn	Ile	Leu	Leu	Ser	Asp			
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Leu	Ala	Tyr	Ile	Leu	Leu	His	Met	Leu	Ile	Ser	Ser	Ser	Ser	Leu	Gly			
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Gly	Trp	Glu	Leu	Gly	Arg	Met	Ala	Cys	Gly	Ile	Leu	Thr	Asp	Ala	Val			
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Phe	Ala	Ala	Cys	Thr	Ser	Thr	Ile	Leu	Ser	Phe	Thr	Ala	Ile	Val	Leu			
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cac	acc	tac	ctg	gca	gtc	atc	cat	cca	ctg	cgc	tac	ctc	tcc	ttc	atg			480
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Ser	His	Gly	Ala	Ala	Trp	Lys	Ala	Val	Ala	Leu	Ile	Trp	Leu	Val	Ala			
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Cys	Cys	Phe	Pro	Thr	Phe	Leu	Ile	Trp	Leu	Ser	Lys	Trp	Gln	Asp	Ala			
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Gln	Leu	Glu	Glu	Gln	Gly	Ala	Ser	Tyr	Ile	Leu	Pro	Pro	Ser	Met	Gly			
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Thr	Gln	Pro	Gly	Cys	Gly	Leu	Leu	Val	Ile	Val	Thr	Tyr	Thr	Ser	Ile			
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ctg	tgc	gtt	ctg	ttc	ctc	tgc	aca	gct	ctc	att	gcc	aac	tgt	ttc	tgg			720
Leu	Cys	Val	Leu	Phe	Leu	Cys	Thr	Ala	Leu	Ile	Ala	Asn	Cys	Phe	Trp			
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Ser	Arg	Ala	Arg	Gly	Thr	Leu	Leu	Ile	His	Ser	Val	Leu	Ile	Thr	Leu			
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Tyr	Val	Ser	Thr	Gly	Val	Val	Phe	Ser	Leu	Asp	Met	Val	Leu	Thr	Arg			
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Leu	Leu	Arg	Tyr	Arg	Gln	Leu	Leu	Gly	Met	Val	Arg	Gly	His	Leu	Pro	
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Ser	Asn	Thr	Ser	Leu	Gly	Leu	Gly	Asp	Leu	Arg	Val	Pro	Ser	Ser	Met
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Leu	Tyr	Trp	Leu	Phe	Leu	Pro	Ser	Ser	Leu	Leu	Ala	Ala	Ala	Thr	Leu
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Ala	Val	Ser	Pro	Leu	Leu	Leu	Val	Thr	Ile	Leu	Arg	Asn	Gln	Arg	Leu
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Arg	Gln	Glu	Pro	His	Tyr	Leu	Leu	Pro	Ala	Asn	Ile	Leu	Leu	Ser	Asp
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Leu	Ala	Tyr	Ile	Leu	Leu	His	Met	Leu	Ile	Ser	Ser	Ser	Ser	Leu	Gly
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Gly	Trp	Glu	Leu	Gly	Arg	Met	Ala	Cys	Gly	Ile	Leu	Thr	Asp	Ala	Val
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Phe	Ala	Ala	Cys	Thr	Ser	Thr	Ile	Leu	Ser	Phe	Thr	Ala	Ile	Val	Leu
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145					150					155					160

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Ser His Gly Ala Ala Trp Lys Ala Val Ala Leu Ile Trp Leu Val Ala  
165 170 175

Cys Cys Phe Pro Thr Phe Leu Ile Trp Leu Ser Lys Trp Gln Asp Ala  
180 185 190

Gln Leu Glu Glu Gln Gly Ala Ser Tyr Ile Leu Pro Pro Ser Met Gly  
195 200 205

Thr Gln Pro Gly Cys Gly Leu Leu Val Ile Val Thr Tyr Thr Ser Ile  
210 215 220

Leu Cys Val Leu Phe Leu Cys Thr Ala Leu Ile Ala Asn Cys Phe Trp  
225 230 235 240

Arg Ile Tyr Ala Glu Ala Lys Thr Ser Gly Ile Trp Gly Gln Gly Tyr  
245 250 255

Ser Arg Ala Arg Gly Thr Leu Leu Ile His Ser Val Leu Ile Thr Leu  
260 265 270

Tyr Val Ser Thr Gly Val Val Phe Ser Leu Asp Met Val Leu Thr Arg  
275 280 285

Tyr His His Ile Asp Ser Gly Thr His Thr Trp Leu Leu Ala Ala Asn  
290 295 300

Ser Glu Val Leu Met Met Leu Pro Arg Ala Met Leu Thr Tyr Leu Tyr  
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48

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cag	ctg	gtg	gca	aga	aga	cag	aag	tcc	tcc	tac	aac	tat	ctc	ttg	gca	144
Gln	Leu	Val	Ala	Arg	Arg	Gln	Lys	Ser	Ser	Tyr	Asn	Tyr	Leu	Leu	Ala	
		35					40					45				
ctc	gct	gct	gcc	gac	atc	ttg	gtc	ctc	ttt	ttc	ata	gtg	ttt	gtg	gac	192
Leu	Ala	Ala	Ala	Asp	Ile	Leu	Val	Leu	Phe	Phe	Ile	Val	Phe	Val	Asp	
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ttc	ctg	ttg	gaa	gat	ttc	atc	ttg	aac	atg	cag	atg	cct	cag	gtc	ccc	240
Phe	Leu	Leu	Glu	Asp	Phe	Ile	Leu	Asn	Met	Gln	Met	Pro	Gln	Val	Pro	
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Asp	Lys	Ile	Ile	Glu	Val	Leu	Glu	Phe	Ser	Ser	Ile	His	Thr	Ser	Ile	
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Trp	Ile	Thr	Val	Pro	Leu	Thr	Ile	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	
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Ile	Val	Ser	Val	Tyr	Ile	Thr	Cys	Phe	Leu	Thr	Ser	Ile	Pro	Tyr	Tyr	
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His	Val	Leu	Ile	Trp	Ile	His	Cys	Phe	Thr	Val	Tyr	Leu	Val	Pro	Cys	
				165					170					175		
tcc	atc	ttc	ttc	atc	ttg	aac	tca	atc	att	gtg	tac	aag	ctc	agg	agg	576
Ser	Ile	Phe	Phe	Ile	Leu	Asn	Ser	Ile	Ile	Val	Tyr	Lys	Leu	Arg	Arg	
			180					185					190			
aag	agc	aat	ttt	cgt	ctc	cgt	ggc	tac	tcc	acg	ggg	aag	acc	acc	gcc	624
Lys	Ser	Asn	Phe	Arg	Leu	Arg	Gly	Tyr	Ser	Thr	Gly	Lys	Thr	Thr	Ala	
		195					200					205				
atc	ttg	ttc	acc	att	acc	tcc	atc	ttt	gcc	aca	ctt	tgg	gcc	ccc	cgc	672
Ile	Leu	Phe	Thr	Ile	Thr	Ser	Ile	Phe	Ala	Thr	Leu	Trp	Ala	Pro	Arg	
	210					215					220					
atc	atc	atg	att	ctt	tac	cac	ctc	tat	ggg	gcg	ccc	atc	cag	aac	cgc	720
Ile	Ile	Met	Ile	Leu	Tyr	His	Leu	Tyr	Gly	Ala	Pro	Ile	Gln	Asn	Arg	
225					230				235						240	
tgg	ctg	gta	cac	atc	atg	tcc	gac	att	gcc	aac	atg	cta	gcc	ctt	ctg	768
Trp	Leu	Val	His	Ile	Met	Ser	Asp	Ile	Ala	Asn	Met	Leu	Ala	Leu	Leu	
				245					250					255		
aac	aca	gcc	atc	aac	ttc	ttc	ctc	tac	tgc	ttc	atc	agc	aag	cgg	ttc	816
Asn	Thr	Ala	Ile	Asn	Phe	Phe	Leu	Tyr	Cys	Phe	Ile	Ser	Lys	Arg	Phe	
			260					265					270			



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cgc acc atg gca gcc gcc acg ctc aag gct ttc ttc aag tgc cag aag	864
Arg Thr Met Ala Ala Ala Thr Leu Lys Ala Phe Phe Lys Cys Gln Lys	
275 280 285	
caa cct gta cag ttc tac acc aat cat aac ttt tcc ata aca agt agc	912
Gln Pro Val Gln Phe Tyr Thr Asn His Asn Phe Ser Ile Thr Ser Ser	
290 295 300	
ccc tgg atc tcg ccg gca aac tca cac tgc atc aag atg ctg gtg tac	960
Pro Trp Ile Ser Pro Ala Asn Ser His Cys Ile Lys Met Leu Val Tyr	
305 310 315 320	
cag tat gac aaa aat gga aaa cct ata aaa gta tcc ccg tga	1002
Gln Tyr Asp Lys Asn Gly Lys Pro Ile Lys Val Ser Pro	
325 330	

<210> 26  
 <211> 333  
 <212> PRT  
 <213> Homo sapiens

<400> 26

Gly Pro His Arg Ser Gln Arg Ser His Leu Cys Phe Arg Ala Lys Pro	
1 5 10 15	
Val Phe Leu Leu Ser Thr Ala Asn Ile Leu Thr Val Ile Ile Leu Ser	
20 25 30	
Gln Leu Val Ala Arg Arg Gln Lys Ser Ser Tyr Asn Tyr Leu Leu Ala	
35 40 45	
Leu Ala Ala Ala Asp Ile Leu Val Leu Phe Phe Ile Val Phe Val Asp	
50 55 60	
Phe Leu Leu Glu Asp Phe Ile Leu Asn Met Gln Met Pro Gln Val Pro	
65 70 75 80	
Asp Lys Ile Ile Glu Val Leu Glu Phe Ser Ser Ile His Thr Ser Ile	
85 90 95	
Trp Ile Thr Val Pro Leu Thr Ile Asp Arg Tyr Ile Ala Val Cys His	
100 105 110	
Pro Leu Lys Tyr His Thr Val Ser Tyr Pro Ala Arg Thr Arg Lys Val	
115 120 125	
Ile Val Ser Val Tyr Ile Thr Cys Phe Leu Thr Ser Ile Pro Tyr Tyr	
130 135 140	
Trp Trp Pro Asn Ile Trp Thr Glu Asp Tyr Ile Ser Thr Ser Val His	
145 150 155 160	

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His Val Leu Ile Trp Ile His Cys Phe Thr Val Tyr Leu Val Pro Cys  
165 170 175

Ser Ile Phe Phe Ile Leu Asn Ser Ile Ile Val Tyr Lys Leu Arg Arg  
180 185 190

Lys Ser Asn Phe Arg Leu Arg Gly Tyr Ser Thr Gly Lys Thr Thr Ala  
195 200 205

Ile Leu Phe Thr Ile Thr Ser Ile Phe Ala Thr Leu Trp Ala Pro Arg  
210 215 220

Ile Ile Met Ile Leu Tyr His Leu Tyr Gly Ala Pro Ile Gln Asn Arg  
225 230 235 240

Trp Leu Val His Ile Met Ser Asp Ile Ala Asn Met Leu Ala Leu Leu  
245 250 255

Asn Thr Ala Ile Asn Phe Phe Leu Tyr Cys Phe Ile Ser Lys Arg Phe  
260 265 270

Arg Thr Met Ala Ala Ala Thr Leu Lys Ala Phe Phe Lys Cys Gln Lys  
275 280 285

Gln Pro Val Gln Phe Tyr Thr Asn His Asn Phe Ser Ile Thr Ser Ser  
290 295 300

Pro Trp Ile Ser Pro Ala Asn Ser His Cys Ile Lys Met Leu Val Tyr  
305 310 315 320

Gln Tyr Asp Lys Asn Gly Lys Pro Ile Lys Val Ser Pro  
325 330

<210> 27  
<211> 1260  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(1260)  
<223>

<400> 27  
atg ctg gca gct gcc ttt gca gac tct aac tcc agc agc atg aat gtg 48  
Met Leu Ala Ala Ala Phe Ala Asp Ser Asn Ser Ser Ser Met Asn Val  
1 5 10 15

tcc ttt gct cac ctc cac ttt gcc gga ggg tac ctg ccc tct gat tcc 96  
Ser Phe Ala His Leu His Phe Ala Gly Gly Tyr Leu Pro Ser Asp Ser

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20					25					30						
cag Gln	gac Asp	tgg Trp 35	aga Arg	acc Thr	atc Ile	atc Ile	ccg Pro 40	gct Ala	ctc Leu	ttg Leu	gtg Val	gct Ala 45	gtc Val	tgc Cys	ctg Leu	144
gtg Val	ggc Gly 50	ttc Phe	gtg Val	gga Gly	aac Asn	ctg Leu 55	tgt Cys	gtg Val	att Ile	ggc Gly 60	atc Ile	ctc Leu	ctt Leu	cac His	aat Asn	192
gct Ala 65	tgg Trp	aaa Lys	gga Gly	aag Lys	cca Pro 70	tcc Ser	atg Met	atc Ile	cac His	tcc Ser 75	ctg Leu	att Ile	ctg Leu	aat Asn	ctc Leu 80	240
agc Ser	ctg Leu	gct Ala	gat Asp	ctc Leu 85	tcc Ser	ctc Leu	ctg Leu	ctg Leu	ttt Phe 90	tct Ser	gca Ala	cct Pro	atc Ile	cga Arg 95	gct Ala	288
acg Thr	gcg Ala	tac Tyr	tcc Ser 100	aaa Lys	agt Ser	gtt Val	tgg Trp	gat Asp 105	cta Leu	ggc Gly	tgg Trp	ttt Phe 110	gtc Val	tgc Cys	aag Lys	336
tcc Ser	tct Ser	gac Asp 115	tgg Trp	ttt Phe	atc Ile	cac His	aca Thr 120	tgc Cys	atg Met	gca Ala	gcc Ala	aag Lys 125	agc Ser	ctg Leu	aca Thr	384
atc Ile	gtt Val 130	gtg Val	gtg Val	gcc Ala	aaa Lys	gta Val 135	tgc Cys	ttc Phe	atg Met	tat Tyr	gca Ala 140	agt Ser	gac Asp	cca Pro	gcc Ala	432
aag Lys 145	caa Gln	gtg Val	agt Ser	atc Ile	cac His 150	aac Asn	tac Tyr	acc Thr	atc Ile	tgg Trp 155	tca Ser	gtg Val	ctg Leu	gtg Val	gcc Ala 160	480
atc Ile	tgg Trp	act Thr	gtg Val	gct Ala 165	agc Ser	ctg Leu	tta Leu	ccc Pro	ctg Leu 170	ccg Pro	gaa Glu	tgg Trp	ttc Phe	ttt Phe 175	agc Ser	528
acc Thr	atc Ile	agg Arg	cat His 180	cat His	gaa Glu	ggt Gly	gtg Val	gaa Glu 185	atg Met	tgc Cys	ctc Leu	gtg Val	gat Asp 190	gta Val	cca Pro	576
gct Ala	gtg Val	gct Ala 195	gaa Glu	gag Glu	ttt Phe	atg Met	tgc Ser 200	atg Met	ttt Phe	ggt Gly	aag Lys	ctc Leu 205	tac Tyr	cca Pro	ctc Leu	624
ctg Leu	gca Ala 210	ttt Phe	ggc Gly	ctt Leu	cca Pro	tta Leu 215	ttt Phe	ttt Phe	gcc Ala	agc Ser	ttt Phe 220	tat Tyr	ttc Phe	tgg Trp	aga Arg	672
gct Ala 225	tat Tyr	gac Asp	caa Gln	tgt Cys	aaa Lys 230	aaa Lys	cga Arg	gga Gly	act Thr	aag Lys 235	act Thr	caa Gln	aat Asn	ctt Leu	aga Arg 240	720
aac Asn	cag Gln	ata Ile	cgc Arg	tca Ser 245	aag Lys	caa Gln	gtc Val	aca Thr	gtg Val 250	atg Met	ctg Leu	ctg Leu	agc Ser	att Ile 255	gcc Ala	768
atc Ile	atc Ile	tct Ser	gct Ala 260	ctc Leu	ttg Leu	tgg Trp	ctc Leu	ccc Pro 265	gaa Glu	tgg Trp	gta Val	gct Ala	tgg Trp 270	ctg Leu	tgg Trp	816
gta	tgg	cat	ctg	aag	gct	gca	ggc	ccg	gcc	cca	cca	caa	ggt	ttc	ata	864

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Val	Trp	His	Leu	Lys	Ala	Ala	Gly	Pro	Ala	Pro	Pro	Gln	Gly	Phe	Ile	
		275					280					285				
gcc	ctg	tct	caa	gtc	tgt	atg	ttt	tcc	atc	tct	tca	gca	aat	cct	ctc	912
Ala	Leu	Ser	Gln	Val	Leu	Met	Phe	Ser	Ile	Ser	Ser	Ala	Asn	Pro	Leu	
	290					295					300					
att	ttt	ctt	gtg	atg	tcg	gaa	gag	ttc	agg	gaa	ggc	ttg	aaa	ggg	gta	960
Ile	Phe	Leu	Val	Met	Ser	Glu	Glu	Phe	Arg	Glu	Gly	Leu	Lys	Gly	Val	
305					310					315					320	
tgg	aaa	tgg	atg	ata	acc	aaa	aaa	cct	cca	act	gtc	tca	gag	tct	cag	1008
Trp	Lys	Trp	Met	Ile	Thr	Lys	Lys	Pro	Pro	Thr	Val	Ser	Glu	Ser	Gln	
				325					330					335		
gaa	aca	cca	gct	ggc	aac	tca	gag	ggg	ctt	cct	gac	aag	ggt	cca	tct	1056
Glu	Thr	Pro	Ala	Gly	Asn	Ser	Glu	Gly	Leu	Pro	Asp	Lys	Val	Pro	Ser	
			340					345					350			
cca	gaa	tcc	cca	gca	tcc	ata	cca	gaa	aaa	gag	aaa	ccc	agc	tct	ccc	1104
Pro	Glu	Ser	Pro	Ala	Ser	Ile	Pro	Glu	Lys	Glu	Lys	Pro	Ser	Ser	Pro	
		355					360					365				
tcc	tct	ggc	aaa	ggg	aaa	act	gag	aag	gca	gag	att	ccc	atc	ctt	cct	1152
Ser	Ser	Gly	Lys	Gly	Lys	Thr	Glu	Lys	Ala	Glu	Ile	Pro	Ile	Leu	Pro	
	370					375					380					
gac	gta	gag	cag	ttt	tgg	cat	gag	agg	gac	aca	gtc	cct	tct	gta	cag	1200
Asp	Val	Glu	Gln	Phe	Trp	His	Glu	Arg	Asp	Thr	Val	Pro	Ser	Val	Gln	
385					390					395					400	
gac	aat	gac	cct	atc	ccc	tgg	gaa	cat	gaa	gat	caa	gag	aca	ggg	gaa	1248
Asp	Asn	Asp	Pro	Ile	Pro	Trp	Glu	His	Glu	Asp	Gln	Glu	Thr	Gly	Glu	
				405					410					415		
ggg	gtt	aaa	tag													1260
Gly	Val	Lys														

<210> 28  
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 <213> Homo sapiens

<400> 28

Met	Leu	Ala	Ala	Ala	Phe	Ala	Asp	Ser	Asn	Ser	Ser	Ser	Met	Asn	Val
1				5					10					15	
Ser	Phe	Ala	His	Leu	His	Phe	Ala	Gly	Gly	Tyr	Leu	Pro	Ser	Asp	Ser
			20					25					30		
Gln	Asp	Trp	Arg	Thr	Ile	Ile	Pro	Ala	Leu	Leu	Val	Ala	Val	Cys	Leu
	35						40					45			
Val	Gly	Phe	Val	Gly	Asn	Leu	Cys	Val	Ile	Gly	Ile	Leu	Leu	His	Asn
	50					55					60				

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Ala Trp Lys Gly Lys Pro Ser Met Ile His Ser Leu Ile Leu Asn Leu  
65 70 75 80

Ser Leu Ala Asp Leu Ser Leu Leu Leu Phe Ser Ala Pro Ile Arg Ala  
85 90 95

Thr Ala Tyr Ser Lys Ser Val Trp Asp Leu Gly Trp Phe Val Cys Lys  
100 105 110

Ser Ser Asp Trp Phe Ile His Thr Cys Met Ala Ala Lys Ser Leu Thr  
115 120 125

Ile Val Val Val Ala Lys Val Cys Phe Met Tyr Ala Ser Asp Pro Ala  
130 135 140

Lys Gln Val Ser Ile His Asn Tyr Thr Ile Trp Ser Val Leu Val Ala  
145 150 155 160

Ile Trp Thr Val Ala Ser Leu Leu Pro Leu Pro Glu Trp Phe Phe Ser  
165 170 175

Thr Ile Arg His His Glu Gly Val Glu Met Cys Leu Val Asp Val Pro  
180 185 190

Ala Val Ala Glu Glu Phe Met Ser Met Phe Gly Lys Leu Tyr Pro Leu  
195 200 205

Leu Ala Phe Gly Leu Pro Leu Phe Phe Ala Ser Phe Tyr Phe Trp Arg  
210 215 220

Ala Tyr Asp Gln Cys Lys Lys Arg Gly Thr Lys Thr Gln Asn Leu Arg  
225 230 235 240

Asn Gln Ile Arg Ser Lys Gln Val Thr Val Met Leu Leu Ser Ile Ala  
245 250 255

Ile Ile Ser Ala Leu Leu Trp Leu Pro Glu Trp Val Ala Trp Leu Trp  
260 265 270

Val Trp His Leu Lys Ala Ala Gly Pro Ala Pro Pro Gln Gly Phe Ile  
275 280 285

Ala Leu Ser Gln Val Leu Met Phe Ser Ile Ser Ser Ala Asn Pro Leu  
290 295 300

Ile Phe Leu Val Met Ser Glu Glu Phe Arg Glu Gly Leu Lys Gly Val  
305 310 315 320

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Trp Lys Trp Met Ile Thr Lys Lys Pro Pro Thr Val Ser Glu Ser Gln  
325 330 335

Glu Thr Pro Ala Gly Asn Ser Glu Gly Leu Pro Asp Lys Val Pro Ser  
340 345 350

Pro Glu Ser Pro Ala Ser Ile Pro Glu Lys Glu Lys Pro Ser Ser Pro  
355 360 365

Ser Ser Gly Lys Gly Lys Thr Glu Lys Ala Glu Ile Pro Ile Leu Pro  
370 375 380

Asp Val Glu Gln Phe Trp His Glu Arg Asp Thr Val Pro Ser Val Gln  
385 390 395 400

Asp Asn Asp Pro Ile Pro Trp Glu His Glu Asp Gln Glu Thr Gly Glu  
405 410 415

Gly Val Lys

<210> 29  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> peptide

<400> 29

Arg Arg Leu Ile Glu Asp Ala Glu Tyr Ala Ala Arg Gly  
1 5 10

<210> 30  
<211> 11  
<212> DNA  
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<220>  
<223> NF kappa B consensus binding site

<400> 30  
ggggactttc c

11

<210> 31  
<211> 30  
<212> DNA  
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<220>  
<223> primer

<400> 31  
ccggaattca ccatggatcc aaccaccccg

30

<210> 32  
<211> 31  
<212> DNA  
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<220>  
<223> primer

<400> 32  
ctagtctaga ctctacacca gactgcttct c

31

<210> 33  
<211> 20  
<212> DNA  
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<220>  
<223> primer

<400> 33  
ttctctgtct acgtcctcag

20

<210> 34  
<211> 20  
<212> DNA  
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<223> primer

<400> 34  
gtcctgtcat ctcttaacag

20

<210> 35  
<211> 8  
<212> PRT  
<213> Artificial sequence

<220>  
<223> Angiopeptin

<220>  
<221> PEPTIDE  
<222> (1)..(7)  
<223>

<220>  
<221> MISC\_FEATURE  
<222> (1)..(1)  
<223> Xaa in position 1 is D-Nal or beta-(1-Naphthyl)-D-alanyl where  
D means the dextrogyre form of the amino acid

<220>  
<221> MISC\_FEATURE  
<222> (4)..(4)

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<223> Xaa in position 4 is D-Trp i.e the dextrogyre form of the amino acid, tryptophan

<400> 35

Xaa Cys Tyr Xaa Lys Val Cys Thr  
1 5

<210> 36

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Somatostatin analogue

<220>

<221> MISC\_FEATURE

<222> (4)..(4)

<223> Xaa in position 4 is D-Trp i.e the dextrogyre form of the amino acid, tryptophan

<220>

<221> PEPTIDE

<222> (1)..(7)

<223>

<220>

<221> MISC\_FEATURE

<222> (1)..(1)

<223> Xaa in position 1 is D2-Nal or beta-(2-Naphthyl)-D-alanyl where D means the dextrogyre form of the amino acid

<220>

<221> MISC\_FEATURE

<222> (8)..(8)

<223> Xaa in position 1 is D2-Nal or beta-(2-Naphthyl)-D-alanyl where D means the dextrogyre form of the amino acid

<400> 36

Xaa Cys Tyr Xaa Lys Val Cys Xaa  
1 5

<210> 37

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 37

ccggaattca ccatggagtc ctcacccatc

30

<210> 38



<211> 29  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> primer

<400> 38  
 ctagtctaga catcatgact ccagccggg 29

<210> 39  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence

<220>  
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<400> 39  
 ccggaattca ccatggatcc aaccatctca acc 33

<210> 40  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> primer

<400> 40  
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<210> 41  
 <211> 33  
 <212> DNA  
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<220>  
 <223> primer

<400> 41  
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<210> 42  
 <211> 33  
 <212> DNA  
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<220>  
 <223> primer

<400> 42  
 tacttctaga cccaccagca ctcatctgtg tac 33

<210> 43  
 <211> 38  
 <212> DNA  
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<220>  
<223> primer

<400> 43  
ccggaattca ccatgaacca gactttgaat agcagtgg 38

<210> 44  
<211> 37  
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<220>  
<223> primer

<400> 44  
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<210> 45  
<211> 28  
<212> DNA  
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<220>  
<223> primer

<400> 45  
ccggaattca ccatggaagc tgacctgg 28

<210> 46  
<211> 29  
<212> DNA  
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<220>  
<223> primer

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ctagtctaga ctcacgtggg gcctgcgcc 29

<210> 47  
<211> 35  
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<220>  
<223> primer

<400> 47  
cagagaattc ctgcaattct attctagctc ctgtg 35

<210> 48  
<211> 33  
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gcgggatcct attgtcaacc aagctgtgac atg 33

<210> 49  
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<210> 50  
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<400> 50  
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